Form Approved
OMB No. 2040-0250

JUN 10 2013

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*

FORM 2B NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATIONS FOR PERMIT TO DISCHARGE WASTEWATER
CONCENTRATED ANIMAL FEEDING OPERATIONS AND AQUATIC ANIMAL PRODUCTION FACILITIES

I. GENERAL INFORMATION

Applying for: Individual Permit ☒ Coverage Under General Permit ☐

A. TYPE OF BUSINESS	B. CONTACT INFORMATION	C. FACILITY OPERATION STATUS
☒ 1. Concentrated Animal Feeding Operation (complete items B, C, D, and section II) ☐ 2. Concentrated Aquatic Animal Production Facility (complete items B, C, and section III)	Owner/or Operator Name: Murphy-Brown LLC Telephone: (804) 834-2109 Address: P.O. Box 1240 Facsimile: (804) 834-8926 City: Waverly State: VA Zip Code: 23890	☒ 1. Existing Facility ☐ 2. Proposed Facility

D. FACILITY INFORMATION

Name: Murphy-Brown LLC Farm 12 Telephone: (804) 834-2109
Address: 34308 Old Wakefield Road Facsimile: (804) 834-8926
City: Wakefield State: Virginia Zip Code: 23888
County: Sussex Latitude: 36 deg. 59 min. 50 sec. Longitude: 77 deg. 02 min. 00 sec.

If contract operation: Name of Integrator: N/A
Address of Integrator: N/A

II. CONCENTRATED ANIMAL FEEDING OPERATION CHARACTERISTICS

A. TYPE AND NUMBER OF ANIMALS

1. TYPE	2. ANIMALS: NO. IN OPEN CONFINEMENT	2. ANIMALS: NO. HOUSED UNDER ROOF
☐ Mature Dairy Cows		
☐ Dairy Heifers		
☐ Veal Calves		
☐ Cattle (not dairy or veal calves)		
☒ Swine (55 lbs. or over)		7,350
☒ Swine (under 55 lbs.)		3,150
☐ Horses		
☐ Sheep or Lambs		
☐ Turkeys		
☐ Chickens (Broilers)		
☐ Chickens (Layers)		
☐ Ducks		
☐ Other: Specify _____		
3. TOTAL ANIMALS		10,500

B. MANURE, LITTER, AND/OR WASTEWATER PRODUCTION AND USE

1. How much manure, litter, and wastewater is generated annually by the facility? N/A tons 10.2M gallons
2. If land applied how many acres of land under the control of the applicant are available for applying the CAFOs manure/litter/wastewater? 63 acres
3. How many tons of manure or litter, or gallons of wastewater produced by the CAFO will be transferred annually to other persons? 0 tons 0 gallons

[redacted]

C. ☒ TOPOGRAPHIC MAP

D. TYPE OF CONTAINMENT, STORAGE AND CAPACITY

1. Type of Containment	Total Capacity (in gallons)
☐ Lagoon	
☐ Holding Pond	
☐ Evaporation Pond	
☐ Other: Specify _____	

2. Report the total number of acres contributing drainage: 63 acres

3. Type of Storage	Total Number of Days	Total Capacity (gallons/tons)
☒ Anaerobic Lagoon	180	36,329,348 gals.
☐ Storage Lagoon		
☐ Evaporation Pond		
☐ Aboveground Storage Tanks		
☐ Belowground Storage Tanks		
☐ Roofed Storage Shed		
☐ Concrete Pad		
☐ Impervious Soil Pad		
☐ Other: Specify _____		

E. NUTRIENT MANAGEMENT PLAN

Note: Effective February 27, 2009, a permit application is not complete until a nutrient management plan is submitted to the Permitting Authority.

1. Please indicate whether a nutrient management plan has been included with this permit application. ☒ Yes ☐ No

2. If no, please explain:

3. Is a nutrient management plan being implemented for the facility? ☒ Yes ☐ No

4. The date of the last review or revision of the nutrient management plan. Date: 03/20/12

5. If not land applying, describe alternative use(s) of manure, litter, and/or wastewater:

F. LAND APPLICATION BEST MANAGEMENT PRACTICES

Please check any of the following best management practices that are being implemented at the facility to control runoff and protect water quality:

☒ Buffers ☒ Setbacks ☒ Conservation tillage ☐ Constructed wetlands ☐ Infiltration field ☒ Grass filter ☐ Terrace

Form Approved
OMB No. 2040-0250

III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS

A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.

1. Outfall No.	2. Flow (*gallons per day*)		
	a. Maximum. Daily	b. Maximum 30 Day	c. Long Term Average

B. Indicate the total number of ponds, raceways, and similar structures in your facility.

1. Ponds	2. Raceways	3. Other

C. Provide the name of the receiving water and the source of water used by your facility.

1. Receiving Water	2. Water Source

D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time.

1. Cold Water Species			2. Warm Water Species		
a. Species	b. Harvestable Weight *(pounds)*		a. Species	b. Harvestable Weight *(pounds)*	
	(1) Total Yearly	(2) Maximum		(1) Total Yearly	(2) Maximum

E. Report the total pounds of food during the calendar month of maximum feeding.

1. Month	2. Pounds of Food

IV. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Name and Official Title (*print or type*)	B. Telephone (910) 293-3434
Kraig Westerbeek - Assistant Vice President of Environment, Health, & Safety	
C. Signature	D. Date Signed 4-8-13

INSTRUCTIONS

GENERAL

This form must be completed by all applicants who check "yes" to Item II-B in Form 1. Not all animal feeding operations or fish farms are required to obtain NPDES permits. Exclusions are based on size and whether or not the facility discharges proposed to discharge. *See* the description of these exclusions in the CAFO regulations at 40 CFR 122.23.

For aquatic animal production facilities, the size cutoffs are based on whether the species are warm water or cold water, on the production weight per year in harvestable pounds, and on the amount of feeding in pounds of food (*for cold water species*). Also, facilities which discharge less than 30 days per year, or only during periods of excess runoff (*for warm water fish*) are not required to have a permit.

Refer to the Form 1 instructions to determine where to file this form.

Item I-A

See the note above to be sure that your facility is a "concentrated animal feeding operation" (CAFO).

Item I-B

Use this space to give owner/operator contact information.

Item I-C

Check "proposed" if your facility is not now in operation or is expanding to meet the definition of a CAFO in accordance with the CAFO regulations at 40 CFR 122.23.

Item I-D

Use this space to give a complete legal description of your facility's location including name, address, and latitude/longitude. Also, if a contract grower, the name and address of the integrator.

Item II

Supply all information in item II if you checked (1) in item I-A.

Item II-A

Give the maximum number of each type of animal in open confinement or housed under roof (either partially or totally) which are held at your facility for a total of 45 days or more in any 12 month period. Provide the total number of animals confined at the facility.

Item II-B

Provide the total amount of manure, litter, and wastewater generated annually by the facility. Identify if manure, litter, and wastewater generated by the facility is to be land applied and the number of acres, under the control of the CAFO operator, suitable for land application. If the answer to question 3 is yes, provide the estimated annual quantity of manure, litter, and wastewater that the applicant plans to transfer off-site.

Item II-C

Check this box if you have submitted a topographic map of the entire operation, including the production area and land under the operational control of the CAFO operator where manure, litter, and/or wastewater are applied with Form 1.

Item II-D

1. Provide information on the type of containment and the capacity of the containment structure (s).
2. The number of acres that are drained and collected in the containment structure (s).
3. Identify the type of storage for the manure, litter, and/or wastewater. Give the capacity of this storage in days.

Item II-E

Provide information concerning the status of submitting a nutrient management plan for the facility to complete the application. In those cases where the nutrient management plan has not been submitted, provide an explanation. If not land applying, describe the alternative uses of the manure, litter, and wastewater (*e.g.*, composting, pelletizing, energy generation, etc.).

Item II-F

Check any of the identified conservation practices that are being implemented at the facility to control runoff and protect water quality.

Item III

Supply all information in Item III if you checked (2) in Item I-A.

Item III-A

Outfalls should be numbered to correspond with the map submitted in Item XI of Form 1. Values given for flow should be representative of your normal operation. The maximum daily flow is the maximum measured flow occurring over a calendar day. The maximum 30-day flow is the average of measured daily flow over the calendar month of highest flow. The long-term average flow is the average of measure daily flows over a calendar year.

Item III-B

Give the total number of discrete ponds or raceways in your facility. Under "other," give a descriptive name of any structure which is not a pond or a raceway but which results in discharge to waters of the United States.

Item III-C

Use names for receiving water and source of water which correspond to the map submitted in Item XI of Form 1.

Item III-D

The names of fish species should be proper, common, or scientific names as given in special Publication No. 6 of the American Fisheries Society. "A List of Common and Scientific Names of Fishes from the United States and Canada." The values given for total weight produced by your facility per year and the maximum weight present at any one time should be representative of your normal operation.

Item III-E

The value given for maximum monthly pounds of food should be representative of your normal operation.

Item IV

The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(C)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application...shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

Federal regulations require the certification to be signed as follows:

A. For corporation, by a principal executive officer of at least the level of vice president.

B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

C. For a municipality, State, federal, or other public facility, by either a principal executive officer or ranking elected official.

Paper Reduction Act Notice

The public reporting and recordkeeping burden for this collection of information is estimated to average 9.5 hours per response. The public reporting and recordkeeping burden for development of the nutrient management plan to be submitted with the form is estimated to average 58 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
CONCENTRATED ANIMAL FEEDING OPERATIONS

PERMIT APPLICATION ADDENDUM

PLEASE TYPE OR PRINT ALL INFORMATION - ALL PARTS OF THIS FORM MUST BE COMPLETED

For DEQ Use Only:
Complete: Yes ☐ No ☐
Initials: _____
Date: _____

I. CONTACT INFORMATION

Owner Name:	Murphy-Brown LLC				
Mailing Address:	P.O. Box 1240				
City:	Waverly	State:	Virginia	Zip Code:	23890
E-Mail Address:	robritt@murphybrownllc.com				
Business Phone:	(804) 834-2109	Mobile Phone:	(804) 731-9603	Home Phone:	
Best day of the week & time to contact the applicant:	Day(s): Mon.- Fri.	Time(s): 8:00am – 5:00pm	☐ AM ☐ PM		

II. FARM/FACILITY INFORMATION

Farm/Facility Name:	Murphy-Brown LLC Farm 12		
Location:	34308 Old Wakefield Road, Wakefield, VA, 23888		
Does Farm/Facility have an existing permit?	X Yes ☐ No	If yes, Permit Number:	VPA00575

III. FARM OPERATING MANUAL

A. Operating Manual been developed for this facility? Has a Farm ☐ Yes X No

B. If yes, provide the date of the last review/revision of the Farm Operating Manual. Date:_____

C. Manual (if already developed) is attached: A copy of the ☐ Yes ☐ No.
The attached copy may be a hard copy or an electronic copy.

IV. GROUNDWATER MONITORING PLAN

A. If the facility has an existing permit, is groundwater monitoring required? X Yes ☐ No

B. If yes, has a Groundwater Monitoring Plan been developed for this facility? ☐ Yes X No ? N/A

C. If yes, provide the date of the last review/revision of the Groundwater Monitoring Plan. Date:_____

D. If no, please explain: A geophysical evaluation is being conducted to establish the frame work for a new groundwater monitoring plan.

E.

A copy of the Plan (if already developed) is attached: ? Yes X No ? N/A
The attached copy may be a hard copy or an electronic copy.

IV. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

a) a descriptive name of the discharge point;
b) the latitude and longitude of its location;
c) the name of the nearest potential receiving water;
d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

For DEQ Use: I.D. Number	Discharge Point	Latitude	Longitude	Name of Nearest Potential Receiving Water	Area Contributing Flow	Treatment or BMPs
	1	37°0'15.02" N	77°2'5.92" W	Unnamed tributary to Coppahaunk Creek	Production Area – Farm 12	Secondary Containment
	2	37°0'12.95" N	77°1'57.73" W	Unnamed tributary to Coppahaunk Creek	Production Area – Farm 12	Secondary Containment
	3					
	4					
	5					

V. BEST MANAGEMENT PRACTICES (BMPs)

A.

BMPs are utilized, installed or constructed for each of the areas listed in Section V above. X Yes ☐ No

B.

If no, please explain:_____

C. Attach to this Addendum, a description of the BMPs listed above in Section V or a copy of the Farm Operating Manual (if already developed). *The attached copy may be a hard copy or an electronic copy.*

VI. OTHER ATTACHMENTS (see instructions for requirements)

A.

The completed and signed Local Government Ordinance Form (LGOF) is attached: ? Yes ? No X On file with DEQ

B.

A copy of the Department of Conservation and Recreation (DCR) Nutrient Management Plan (NMP) approval letter is attached: X Yes ? No

VII. CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name: Kraig Westerbeek Official Title: *Assistant Vice President Environment, Health, & Safety*

Signature: Date: 5/14/2014

ADDITIONAL INFORMATION AND INSTRUCTIONS
VPDES CAFO PERMIT APPLICATION ADDENDUM

GENERAL INFORMATION

This permit application addendum must be completed and submitted when an owner of a concentrated animal feeding operation makes application to the Department of Environmental Quality for a Virginia Pollutant Discharge Elimination (VPDES) Permit. Contact the nearest DEQ regional office if you have questions about completing this form. Please type or print all information. All parts of this form must be completed.

DEFINITION OF TERMS

Best Management Practice (BMP): means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to surface waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Process Wastewater: Process wastewater from an AFO means water directly or indirectly used in the operation of the AFO for any of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of the (confined) animals; or dust control. Process wastewater from an AFO also includes any water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding.

Production Area: means that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage areas include but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions that separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

Storm Water: means storm water run-off, snow melt run-off, and surface run-off and drainage.

APPLICATION ADDENDUM INSTRUCTIONS

I. CONTACT INFORMATION

Give the name, mailing address, telephone numbers and e-mail address (if available) of the person to whom this permit will be issued. Please provide the best day of the week and time for DEQ to make contact with the owner during regular working hours.

II. FARM/FACILITY INFORMATION

Give the name of the farm or facility. Give the physical location for the animal feeding operation other than the owner's mailing address (e.g. Rt. 653, 1 mile west of Rt. 702). List the number of any expiring or currently effective permits issued to the concentrated animal feeding operation under the VPA or VPDES permit program.

III. FARM OPERATING MANUAL

Indicate if a Farm Operating Manual has been developed for this facility. If yes, provide the date of the last review/revision of the Farm Operating Manual. If the Manual has already been developed then indicate whether a copy of the Manual is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a manual:
The Permittee shall develop and submit a Farm Operating Manual for approval by the Department within 90 days of the effective date of this permit. The Farm Operating Manual shall include at a minimum the following information:

a. identification of land features or structures where storm water will likely leave the production area(s) and enter surface waters of the state;

b. identification of land features or structures in the land application area(s) which will increase the risk of nitrogen and phosphorus transport to surface waters of the state; land features or structures include tile lines, pipes or ditches;

c. practices and procedures which will be followed to ensure that the waste storage facilities are designed and operated in accordance with the permit;

d. practices, procedures and applicable best management practices (BMPs) which will be utilized to ensure compliance with the requirements of this permit including but not limited to the following:

(1) if applicable, identification of the location of BMP(s) that are installed or will be installed at the CAFO facility, for BMP(s) that will be installed include the expected timeframe for installation;

(2) specification of appropriate maintenance that will be performed for each BMP(s);

(3) specification of the steps that will be taken in the event that a BMP(s) is found deficient,

(a) as a result of the visual inspections as required by the permit, or

(b) as a result of other routine inspections, as prescribed by the Farm Operating Manual, of BMP(s) utilized or installed in accordance with the permit.

The steps shall include any actions that will be taken to correct deficiencies in accordance with the permit.

e. practices and procedures which will be followed to ensure that all equipment needed for the proper operation of the permitted facilities is maintained in good working order, including but not limited to the following:

(1) retention of the equipment manufacturer's operation and maintenance manuals or other reference source to allow for timely maintenance and prompt repair of equipment when appropriate; and

(2) specification of the frequencies of inspections in order to detect leaks on equipment used for liquid manure handling and land application; and

f. an emergency plan which includes appropriate procedures for employees to follow in case of an emergency such as; an unauthorized discharge of manure, poultry waste, from the production area or catastrophic animal mortality. The emergency plan must include appropriate information for assistance with the particular emergency and must include contact information for local, state and federal agencies required to be notified in the case of any of the above mentioned events.

The Permittee shall operate the CAFO facility in accordance with the approved Farm Operating Manual which becomes an enforceable part of the permit. Any changes in those practices and procedures shall be documented and submitted to the Department for staff approval within 90 days of the effective date of the changes. The existing manual shall continue to be implemented until the revised manual is approved by the Department. Upon approval of submitted manual changes, the revised manual becomes an enforceable part of the permit. Noncompliance with the approved manual shall be deemed a violation of the permit.

IV. GROUNDWATER MONITORING PLAN

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy.*

Permit requirements for development of a plan:
The Permittee shall develop and submit a Groundwater Monitoring Plan for approval by the Department within 90 days of the effective date of this permit. The Groundwater Monitoring Plan shall include at a minimum the following information:

(1) Procedures to ensure appropriate methods and practices are being used when monitoring groundwater, and

(2) Procedures to ensure appropriate measures are taken where monitoring results demonstrate potential noncompliance with the permit and the approved monitoring plan.

V. DISCHARGE POINT AND BEST MANAGEMENT PRACTICES (BMPs) RELATED TO A DISCHARGE POINT

For each discharge point, provide the following information in the table below:

a) a descriptive name of the discharge point;
b) the latitude and longitude of its location;
c) the name of the nearest potential receiving water;
d) all areas contributing manure, litter, process wastewater, or storm water from the facility; and
e) the treatment received or BMPs utilized, installed or constructed prior to the discharge point.

VI. BEST MANAGEMENT PRACTICES (BMPs)

If the facility has an existing permit, indicate whether groundwater monitoring is required. If groundwater monitoring is required, indicate if a groundwater monitoring plan has been developed for this facility. If yes, provide the date of the last review/revision of the plan. If a plan has not been developed, please explain why the plan has not been developed. If the plan has already been developed then indicate whether a copy of the plan is attached to this Addendum. *The attached copy may be a hard copy or an electronic copy*

VII. OTHER ATTACHMENTS

Local Government Ordinance Form (LGOF)

State Law requires that the owner of any proposed pollutant management activities or those which have not previously been issued a valid VPA or VPDES permit must attach to the permit application, the completed LGOF. The LGOF is the notification from the governing body of the county, city or town where the operation is located that the operation is consistent with all ordinances adopted pursuant to Chapter 22 (§ 15.2-2200 et seq.) of Title 15.2 of the Code of Virginia.

Nutrient Management Plan (NMP) Approval Letter

A copy of the letter from the Virginia Department of Conservation and Recreation (DCR) approving the operation's NMP and certifying that the NMP was developed by a certified nutrient management planner in accordance with §10.1-104.2 of the Code of Virginia must be attached to the permit application. However, if a current NMP approval letter is on file at the DEQ regional office then it is not necessary to attach the NMP approval letter.

VIII. CERTIFICATION STATEMENT

The Certification must bear an original signature in ink, photocopies are not acceptable. State regulations require the permit application to be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

BMP Description – Secondary Containment

The BMP is a grass covered earthen containment structure that collects runoff from the production area. The structure has a manually operated value that is maintained as normally closed. The BMP is inspected daily by the farm production staff. Once water collects in the structure it is visually inspected to ensure it does not contain any contaminants and it released. The BMP has an emergency spillway for structural integrity during extreme rainfall events.

VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT CONCENTRATED ANIMAL FEEDING OPERATION

Permit Application Addendum

Murphy-Brown LLC
Farms 12
Permit VPA 00575

VIII.B MORTALITY DISPOSAL METHODS

The mortality disposal method utilized for this site is rendering. Mortality is removed from the Barn and placed in a mortality ben for pickup and removal from the site. The mortality ben is a synthetic container with a lid. The dead box is picked up and emptied daily by truck, the contents of the box are delivered to the rendering facility. In the event unforeseen circumstances prevent daily pick up of mortality, the mortality is held inside the barn until daily removal can resume.

XI. CHEMICAL HANDLING METHODS

Murphy-Brown LLC maintains a list of all chemicals used on its facilities. The list of hazardous chemical used by Murphy-Brown is maintained by a third party contractor. The contractor provides emergency information for all products used by the company. This includes Material Safety Data Sheets outlining the manufactures guidelines for handling, storage, and disposal. Information is available 24 hours a day for all worksites within the Murphy-Brown organization. Employees are trained to handle, store, and dispose of chemicals pre the manufactures label. Chemicals are not disposed in any manure, process waste water or storm water.

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

June 22, 2012

Mr. R. O. Britt
Murphy-Brown Farm 8512 (12)
P.O. Box 1240
Waverly, VA 23890

Dear Mr. Britt,

Your nutrient management plan (NMP), dated 3/20/2012, for a 10500 head swine operation has been approved by the Virginia Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination System (VPDES) permit. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

A copy of this letter must be kept with your nutrient management plan. A copy of this letter and a copy of the approved plan must be sent to the Piedmont Regional Office of the Virginia Department of Environmental Quality (DEQ).

It should be noted that this plan expires 3/20/2015. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

If you have any questions concerning this letter, please feel free to contact me at bobby.long@dcr.virginia.gov or (434) 547-8172.

Sincerely,

Bobby Long

Bobby Long
Nutrient Management Coordinator – Animal Waste
Division of Stormwater Management

cc: Tim Sexton, DCR Nutrient Management Program Manager
R O Britt
DEQ Piedmont Regional Office

Murphy-Brown LLC
Waverly Division

P.O. Box 1240
Waverly, VA 23890

June 13, 2012

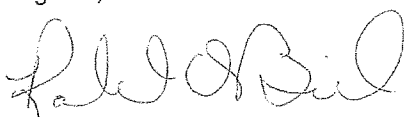
Mr. Bobby Long
Virginia Department of Conservation
203 Governor St., Suite 206
Richmond, VA 23219

Ms. Aleshire,

Please find the attached revised nutrient management plan for Murphy-Brown LLC Farm 8512 located in Sussex County. This revision is an update to the previous plan including updates soil and waste analysis. This revision also reflects a cropping change in fields A3, D1 and D2 from fescue hay to a corn, wheat, sorghum, cover crop rotation. This plan is provided as a routine three year update. The facility is currently covered by permit number VPA00575.

I am request DCR review and approval of this plan. If you have any questions or need further information, I may be reached by telephone at (804) 834-1229, or by email at robritt@murphybrownllc.com. Thank you for your assistance in this matter.

Regards,



R.O. Britt
Senior Environmental Resource Manager
Murphy-Brown LLC, Waverly Division

Nutrient Management Plan Balance Sheet
(Spring, 2012-Spring, 2015)
Murphy-Brown Farm 8512
Planner: R.O. Britt (cert. No. 571)

Tract: 2053 **Location: Sussex**
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1/A1(N)	11/11	2012	Rye (grain)	70-0-30	0/0	129.6k Swine (Sp)	N/A	70-70-775	0-(70)-(745)	N/A		1,2,3,4,5	
			Sorghum (grain)	110-0-30	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(180)-(1935)	N/A		6,7,4,5	
			Rye (cover)	0-0-0	0/0				0-(180)-(1935)	N/A			
		2013	Corn (grain)	150-0-40	0/16	248.9k Swine (Sp)	N/A	134-134-1488	0-(315)-(3385)	N/A		6,7,4,5	
			Wheat (grain)	100-0-30	0/25	139.5k Swine (Fa)	N/A	75-75-834	0-(390)-(4190)	N/A		1,2,3,4,5	
		2014	... ...	-- -- --									
			Sorghum (grain)	110-0-30	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(500)-(5380)	N/A		6,7,4,5	
			Rye (cover)	0-0-0	0/0				0-(500)-(5380)	N/A			
4/A3(N)	5/5	2012	Rye (grain)	70-0-0	0/0	113.9k Swine (Sp)	N/A	61-61-681	10-(60)-(680)	N/A	10-0-0(td)	1,2,3,4,5	
			Sorghum (grain)	110-0-0	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(170)-(1900)	N/A		6,7,4,5	
			Rye (cover)	0-0-0	0/0				0-(170)-(1900)	N/A			
		2013	Corn (grain)	150-0-0	0/15	255.3k Swine (Sp)	N/A	138-138-1527	(5)-(310)-(3425)	N/A		6,7,4,5	
			Wheat (grain)	100-0-0	0/25	141.4k Swine (Fa)	N/A	76-76-846	0-(385)-(4270)	N/A		1,2,3,4,5	
		2014	... ...	-- -- --									
			Sorghum (grain)	110-0-0	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(495)-(5490)	N/A		6,7,4,5	
			Rye (cover)	0-0-0	0/0				0-(495)-(5490)	N/A			
2/B(N)	13/13	2012	Corn (grain)	150-60-40	0/0	277.8k Swine (Sp)	N/A	150-150-1661	0-(90)-(1620)	N/A		6,7,4,5	
			Wheat (grain)	100-40-30	0/20	148.3k Swine (Fa)	N/A	80-80-887	0-(130)-(2475)	N/A		1,2,3,4,5	
		2013	... ...	-- -- --									
			Sorghum (grain)	110-40-30	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(200)-(3665)	N/A		6,7,4,5	
			Rye (cover)	0-0-0	0/0				0-(200)-(3665)	N/A			
		2014	Corn (grain)	150-60-40	0/18	244.7k Swine (Sp)	N/A	132-132-1464	0-(270)-(5090)	N/A		6,7,4,5	
			Wheat (grain)	100-40-30	0/0	185.2k Swine (Fa)	N/A	100-100-1107	0-(330)-(6165)	N/A		1,2,3,4,5	
3/C1(N)	13/13	2012	Bermudagrass hay	270-0-0	0/0	284.3k Swine (Sp)	N/A	154-154-	115-(155)-(1700)	N/A	115-0-0(td)	5,4,8,9,	

		2013	mt.	270-0-0	0/13	284.3k Swine (Sp)	N/A	1700 154-154-	105-(310)-(3400)	N/A	105-0-0(td)	4,8,5,9,	
		2014	... ...	270-0-0	0/19	284.3k Swine (Sp)	N/A	1700 154-154- 1700	100-(465)-(5100)	N/A	100-0-0(td)	4,8,5,9,	

Tract: 2053 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
3/C2(N)	3/3	2012	Bermudagrass hay mt.	235-40-0	0/0	435.2k Swine (Sp)	N/A	235-235-2602	0-(195)-(2600)	N/A		5
			Barley (silage)	70-20-0	0/0	129.6k Swine (Fa)	N/A	70-70-775	0-(245)-(3375)	N/A		8,5
		2013	Bermudagrass hay mt.	235-40-0	0/26	386.2k Swine (Sp)	N/A	209-209-2310	0-(415)-(5685)	N/A		5
			Barley (silage)	70-20-0	0/0	129.6k Swine (Fa)	N/A	70-70-775	0-(465)-(6460)	N/A		8,5
		2014	Bermudagrass hay mt.	235-40-0	0/35	370.1k Swine (Sp)	N/A	200-200-2213	0-(625)-(8675)	N/A		5
			Barley (silage)	70-20-0	0/0	129.6k Swine (Fa)	N/A	70-70-775	0-(675)-(9450)	N/A		8,5
6/D1(N)	7/7	2012	Corn (grain)	150-40-0	0/0	277.8k Swine (Sp)	N/A	150-150-1661	0-(110)-(1660)	N/A		6,7,4,5
			Wheat (grain)	100-30-0	0/20	148.3k Swine (Fa)	N/A	80-80-887	0-(160)-(2545)	N/A		1,2,3,4,5
		2013	... ...	-- -- --								
			Sorghum (grain)	110-30-0	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(240)-(3765)	N/A		6,7,4
			Rye (cover)	0-0-0	0/0				0-(240)-(3765)	N/A		
		2014	Corn (grain)	150-40-0	0/18	244.7k Swine (Sp)	N/A	132-132-1464	0-(330)-(5230)	N/A		6,7,4,5
			Wheat (grain)	100-30-0	0/0	185.2k Swine (Fa)	N/A	100-100-1107	0-(400)-(6335)	N/A		1,2,3,4,5
6/D2(N)	12/12	2012	Corn (grain)	150-20-0	0/0	277.8k Swine (Sp)	N/A	150-150-1661	0-(130)-(1660)	N/A		6,7,4,5
			Wheat (grain)	100-20-0	0/20	148.3k Swine (Fa)	N/A	80-80-887	0-(190)-(2545)	N/A		1,2,3,4,5
		2013	... ...	-- -- --								
			Sorghum (grain)	110-20-0	0/0	203.7k Swine (Su)	N/A	110-110-1218	0-(280)-(3765)	N/A		6,7,4,5
			Rye (cover)	0-0-0	0/0				0-(280)-(3765)	N/A		
		2014	Corn (grain)	150-20-0	0/18	244.7k Swine (Sp)	N/A	132-132-1464	0-(390)-(5230)	N/A		6,7,4,5
			Wheat (grain)	100-20-0	0/0	185.2k Swine (Fa)	N/A	100-100-1107	0-(470)-(6335)	N/A		1,2,3,4,5

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 Topdress during Fall

2 Topdress during early Spring

3 For intensive management of wheat, follow guidance fron Standards and Criteria pages 72-76. (pages are attached).

4 Commercial fertilizer applications may be used in addition to or in place of organic fertilizer applicatins to suplament crop needs and meet yield goals. Total nutrient application shall not exceed crop needs.

5 The maximum waster water application rate per event for this field is 0.9 in./ac. or 24,438.6 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

6 Band nitrogen with planter

7 Apply side dress nitrogen when crop is 12 to 24 inches tall. A pre-side dress tissue sample is reccomended prior to nutrient application.

8 Small grain nutrient applications should be split so that approximatly half is applied in fall/early winter and half in early spring.
9 It is recommended that commercial fertilizer applications be split and applied follwing each hay cutting. One one commercial fertilizer application should exceed 1/2 of the total fertalizer recommendation for the field.

Murphy-Brown Farm 8512 Narrative

This nutrient management plan is an update for Murphy-Brown LLC farm 8512; covered by permit number VPA00575. The farm is located on Rt. 615 in Sussex County, just north of Rt. 460, east of Waverly.

This farm has been converted from a 1,000 sow farrow to finish swine facility to currently a 10,500 wean to finish facility. The farm is operated by Murphy-Brown LLC. The swine waste produced on this site is stored and treated by a two stage anaerobic lagoon system. Under normal circumstances, effluent from the second stage lagoon system is land applied with irrigation equipment. The primary means of irrigation on this site is a hard hose traveler. Occasionally application is conducted through the use of an Aerway field applicator. In order to balance effluent utilization, effluent from any lagoon may be applied to any field. There are approximately 62.9 acres of hay and row crop land available for land application.

Crop rotation varies between fields. Fields A1 and B are in a corn, wheat, sorghum, cover crop rotation. Fields C1 and C2 are in a bermuda hay, small grain hay rotation. Fields A3, D1 and D2 have been converted from a fescue hay rotation to a corn, wheat, sorghum and cover crop.

Commercial fertilizer may be used to supplement crop nutrient needs if effluent application is insufficient to meet the agronomic requirements of the crop. The plan is written with the assumption that there will be sufficient effluent available to meet the agronomic needs of the crops, however if there is not sufficient volume of effluent available to meet the agronomic needs commercial fertilizer may be used to supplement crop needs. Any commercial fertilizer application will be incorporated in the application records for the farm and will not exceed the nutrient recommendations in this plan. All commercial fertilizer application shall be made in accordance with guidance outlined within this plan.

Effluent on this site it treated in a two stage lagoon system. Samples are taken to establish the nutrient content of both the primary and secondary lagoons. Irrigation is typically conducted with effluent from the secondary lagoon; however irrigation may be conducted from either the Secondary or the Primary lagoon. The appropriate effluent analysis shall be used based on which lagoon the effluent is being irrigated from.

Revision 3/21/12
R.O. Britt Cert. 571

This revision reflects the cropping change from fescue hay to a corn, wheat, sorghum, cover crop rotation in fields A3, D1 and D2. This revision also reflects a change in the animal type for the facility from a 1,000 sow farrow to finish operation to 10,500 wean to finish operation.

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
2053	A1	11	2011-Fa	VH (133 P lbs/acre)	H (253 K lbs/acre)	Virginia Tech	6.5		
2053	A3	5	2011-Fa	VH (165 P lbs/acre)	VH (1217 K lbs/acre)	Virginia Tech	7.1		
2053	B	13	2011-Fa	H- (48 P lbs/acre)	H (218 K lbs/acre)	Virginia Tech	6.1		
2053	C1	13	2011-Fa	VH (186 P lbs/acre)	VH (543 K lbs/acre)	Virginia Tech	7.6		
2053	C2	3	2011-Fa	H+ (108 P lbs/acre)	VH (451 K lbs/acre)	Virginia Tech	7.5		
2053	D1	7	2011-Fa	H (83 P lbs/acre)	VH (540 K lbs/acre)	Virginia Tech	7.5		
2053	D2	12	2011-Fa	H+ (106 P lbs/acre)	VH (1647 K lbs/acre)	Virginia Tech	6.9		

Manure Production Summary

Manure Name: Swine Effluent

Animal Summary
Swine: 10500

Manure Storage Capacity: 6519.1 kgals

Manure Analysis:
TKN: 1.08
P2O5: .54
NH4: .69
K2O: 5.98

Plant Available Nutrients:
Immediate Incorporation:
.82 lbs N
.54 lbs P2O5
5.98 lbs K2O
Surface Applied:
.51 lbs N
.54 lbs P2O5
5.98 lbs K2O
Residual N:
yr 1: .05 lbs
yr 2: .02 lbs
yr 3: .01 lbs

Manure Production

Dec-Feb	4891
Mar-May	4891
Jun-Aug	4891
Sep-Nov	4891

Total Produced: 19565
Manure Sold/yr: 0
Manure purch./yr: 0

Liquid Manure Production Details

production [kgal/yr] = (# confined)[animals] * (avg wt)[animal-lbs/animal] * (prod factor)[gal/yr/animal-lb] * (0.001)[kgal/gal] + (# confined)[animals] * (waste-water)[gal/day/animal] * (365)[day/yr] * (0.001)[kgal/gal]

Group Name	animal type	%(#) confined	avg wt	prod factor	waste water	production
Wean to Finish	Swine	100(10500)	125.0	7.5	2.0	17355.5

Net Precipitation Excess

NPE [kgal/yr] = {precip (44.[in/yr]) - evap (40.[in/yr])} * pit/lagoon factor (0.9) * surface area (443103.[sq-ft]) * (1/12)[ft/in] * (7.48)[gal/cu-ft] * (0.001)[kgal/gal] = 2209.61[kgal/yr]

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
2053	1065/1	A1	11	Eulonia	IIb	I	III	I	
	1065/4	A3	5	Eulonia	IIb	I	III	I	
	1065/2	B*	13	Emporia	IIb	II	III	I	Tile Drains
	1065/3	C1*	13	Slagle	IIb	I	III	I	Tile Drains
	1065/3	C2*	3	Rumford	IVb	II	Not Suited	III	High Leaching
	1065/6	D1	7	Slagle	IIb	I	III	I	
	1065/6	D2	12	Slagle	IIIa	II	III	II	

* Do not apply manure or biosolids more than 30 days prior to planting. Apply commercial fertilizer nitrogen to row crops in split spring applicaions.

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Farm Summary Report

Plan: **Farm 8512** **Spring, 2012 - Spring, 2015**

Farm Name: **Murphy-Brown Farm 8512**
Location: Sussex
Specialist: R.O. Britt
N-based Acres: 62.9
P-based Acres: 0.0

Tract Name: **2053**
FSA Number: 1065
Location: Sussex

Field Name: **A1**
Total Acres: 10.50 Usable Acres: 10.50
FSA Number: 1
Tract: 2053
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 600 ft
Distance to stream: 600 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 29.07

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.34 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.2	VH(265 P lbs/acre)	VH(455 K lbs/acre)	Virginia Tech
Fa-2009	6.5	VH(133 P lbs/acre)	H(253 K lbs/acre)	Virginia Tech
Fa-2010	6.8	VH(212 P lbs/acre)	VH(460 K lbs/acre)	Virginia Tech
Fa-2011	6.5	VH(133 P lbs/acre)	H(253 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	25A	Slagle
80	13B	Eulonia

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	30.0 bushel(s)	Rye (grain) - No Till
2012-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2012-Fa	0.0	Rye (cover) - No Till
2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till

Field Name: **A3**

Total Acres:	4.80	Usable Acres:	4.80
FSA Number:	4		
Tract:	2053		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 600 ft
Distance to stream: 600 ft

Conservation Practices:

Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 30.

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.52 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.0	VH(158 P lbs/acre)	VH(1092 K lbs/acre)	Virginia Tech
Fa-2009	6.6	VH(138 P lbs/acre)	VH(878 K lbs/acre)	Virginia Tech
Fa-2010	6.2	H(85 P lbs/acre)	VH(587 K lbs/acre)	Virginia Tech
Fa-2011	7.1	VH(165 P lbs/acre)	VH(1217 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	13B	Eulonia

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	30.0 bushel(s)	Rye (grain) - No Till
2012-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2012-Fa	0.0	Rye (cover) - No Till
2013-Sp	150.0 bushel(s)	Corn (grain) - No Till
2013-Fa	64.0 bushel(s)	Wheat (grain) - No Till
2014-Su	110.0 bushel(s)	Sorghum (grain) - No Till
2014-Fa	0.0	Rye (cover) - No Till

Field Name: **B**
Total Acres: 13.00 Usable Acres: 13.00
FSA Number: 2
Tract: 2053
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 300 ft
Distance to stream: 300 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 31.57

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.56 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.1	VH(171 P lbs/acre)	VH(426 K lbs/acre)	Virginia Tech
Fa-2009	6.2	VH(125 P lbs/acre)	H-(181 K lbs/acre)	Virginia Tech
Fa-2010	6.8	VH(181 P lbs/acre)	VH(346 K lbs/acre)	Virginia Tech
Fa-2011	6.1	H-(48 P lbs/acre)	H(218 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	17A	Myatt
10	25A	Slagle
70	12A	Emporia Slagle

Field Warnings:
Environmentally Sensitive Soils due to:

Subsurface tile drains

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	149.8 bushel(s)	Corn (grain) - No Till
2012-Fa	59.0 bushel(s)	Wheat (grain) - No Till
2013-Su	109.8 bushel(s)	Sorghum (grain) - No Till
2013-Fa	0.0	Rye (cover) - No Till
2014-Sp	149.8 bushel(s)	Corn (grain) - No Till
2014-Fa	59.0 bushel(s)	Wheat (grain) - No Till

Field Name: C1
Total Acres: 13.10 Usable Acres: 13.10
FSA Number: 3
Tract: 2053
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 500 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 30.

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 2.33 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.0	VH(154 P lbs/acre)	VH(479 K lbs/acre)	Virginia Tech
Fa-2009	7.3	VH(201 P lbs/acre)	VH(503 K lbs/acre)	Virginia Tech
Fa-2010	7.5	VH(222 P lbs/acre)	VH(622 K lbs/acre)	Virginia Tech
Fa-2011	7.6	VH(186 P lbs/acre)	VH(543 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	12A	Emporia Slagle
10	13B	Eulonia
60	25A	Slagle

Field Warnings:
Environmentally Sensitive Soils due to:

Subsurface tile drains

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till
2013-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till
2014-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till

Field Name: **C2**

Total Acres:	3.20	Usable Acres:	3.20
FSA Number:	3		
Tract:	2053		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 300 ft
Distance to stream: 300 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 54.58

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 5.92 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.1	VH(117 P lbs/acre)	VH(340 K lbs/acre)	Virginia Tech
Fa-2009	7.0	VH(131 P lbs/acre)	VH(526 K lbs/acre)	Virginia Tech
Fa-2010	7.5	VH(145 P lbs/acre)	VH(829 K lbs/acre)	Virginia Tech
Fa-2011	7.5	H+(108 P lbs/acre)	VH(451 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
90	23B	Rumford Uchee
10	25B	Slagle

Field Warnings:
Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2012-Fa	9.3 * ton	Barley (silage) - No Till
2013-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2013-Fa	9.3 * ton	Barley (silage) - No Till
2014-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2014-Fa	9.3 * ton	Barley (silage) - No Till

Field Name: **D1**
Total Acres: 6.60 Usable Acres: 6.60
FSA Number: 6
Tract: 2053
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 200 ft
Distance to stream: 200 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 30.56

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.76 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	6.8	H(81 P lbs/acre)	VH(641 K lbs/acre)	Virginia Tech
Fa-2009	7.5	VH(115 P lbs/acre)	VH(812 K lbs/acre)	Virginia Tech
Fa-2010	7.4	VH(159 P lbs/acre)	VH(840 K lbs/acre)	Virginia Tech
Fa-2011	7.5	H(83 P lbs/acre)	VH(540 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	12C	Emporia Slagle
80	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	148.8 bushel(s)	Corn (grain) - No Till
2012-Fa	63.0 bushel(s)	Wheat (grain) - No Till
2013-Su	108.8 bushel(s)	Sorghum (grain) - No Till
2013-Fa	0.0	Rye (cover) - No Till
2014-Sp	148.8 bushel(s)	Corn (grain) - No Till

2014-Fa 63.0 bushel(s) Wheat (grain) - No Till

Field Name: D2
Total Acres: 11.70 Usable Acres: 11.70
FSA Number: 6
Tract: 2053
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 200 ft
Distance to stream: 200 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 30.97

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.79 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.3	VH(207 P lbs/acre)	VH(1052 K lbs/acre)	Virginia Tech
Fa-2009	7.6	VH(219 P lbs/acre)	VH(1281 K lbs/acre)	Virginia Tech
Fa-2010	7.3	VH(220 P lbs/acre)	VH(1456 K lbs/acre)	Virginia Tech
Fa-2011	6.9	H+(106 P lbs/acre)	VH(1647 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	25A	Slagle
30	12C	Emporia Slagle
40	12A	Emporia Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2012-Sp	145.8 bushel(s)	Corn (grain) - No Till
2012-Fa	60.6 bushel(s)	Wheat (grain) - No Till
2013-Su	105.8 bushel(s)	Sorghum (grain) - No Till
2013-Fa	0.0	Rye (cover) - No Till
2014-Sp	145.8 bushel(s)	Corn (grain) - No Till
2014-Fa	60.6 bushel(s)	Wheat (grain) - No Till

Tract Name: **Default Tract**
FSA Number: 0
Location: Sussex

Application Summary Report

2012: Rye (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	129.6k Swine(Sp)				
	A3	4.8	113.9k Swine(Sp)			10-0-0(Sp)	

2012: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	203.7k Swine(Su)				
	A3	4.8	203.7k Swine(Su)				

2012: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	B	13.0	277.8k Swine(Sp)				
	D1	6.6	277.8k Swine(Sp)				
	D2	11.7	277.8k Swine(Sp)				

2012: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	B	13.0	148.3k Swine(Fa)				
	D1	6.6	148.3k Swine(Fa)				
	D2	11.7	148.3k Swine(Fa)				

2012: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)

			(Season)				
2053	C1	13.1	284.3k Swine(Sp)			115-0-0(Sp)	
	C2	3.2	435.2k Swine(Sp)				

2012: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C2	3.2	129.6k Swine(Fa)				

2013: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	248.9k Swine(Sp)				
	A3	4.8	255.3k Swine(Sp)				

2013: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	139.5k Swine(Fa)				
	A3	4.8	141.4k Swine(Fa)				

2013: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	B	13.0	203.7k Swine(Su)				
	D1	6.6	203.7k Swine(Su)				
	D2	11.7	203.7k Swine(Su)				

2013: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure	Broadcast	Banded	Topdress	Lime

			Rate and Type (Season)	Commercial	Commercial	Commercial	(tons)
2053	C1	13.1	284.3k Swine(Sp)			105-0-0(Sp)	
	C2	3.2	386.2k Swine(Sp)				

2013: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C2	3.2	129.6k Swine(Fa)				

2014: Sorghum (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	203.7k Swine(Su)				
	A3	4.8	203.7k Swine(Su)				

2014: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	B	13.0	244.7k Swine(Sp)				
	D1	6.6	244.7k Swine(Sp)				
	D2	11.7	244.7k Swine(Sp)				

2014: Wheat (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	B	13.0	185.2k Swine(Fa)				
	D1	6.6	185.2k Swine(Fa)				
	D2	11.7	185.2k Swine(Fa)				

2014: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C1	13.1	284.3k Swine(Sp)			100-0-0(Sp)	
	C2	3.2	370.1k Swine(Sp)				

2014: Barley (silage)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C2	3.2	129.6k Swine(Fa)				

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2012Sp	Swine Effluent	129.6 kgals	2053	A1	11	Rye (grain)	1361 kgals	1361 kgals
		113.9 kgals	2053	A3	5	Rye (grain)	546 kgals	1908 kgals
		277.8 kgals	2053	B	13	Corn (grain)	3611 kgals	5519 kgals
		284.3 kgals	2053	C1	13	Bermudagrass (hay), maint	3724 kgals	9243 kgals
		435.2 kgals	2053	C2	3	Bermudagrass (hay), maint	1393 kgals	10636 kgals
		277.8 kgals	2053	D1	7	Corn (grain)	1833 kgals	12469 kgals
		277.8 kgals	2053	D2	12	Corn (grain)	3250 kgals	15719 kgals
2012Su	Swine Effluent	203.7 kgals	2053	A1	11	Sorghum (grain)	2139 kgals	2139 kgals
		203.7 kgals	2053	A3	5	Sorghum (grain)	978 kgals	3117 kgals
2012Fa	Swine Effluent	148.3 kgals	2053	B	13	Wheat (grain)	1927 kgals	1927 kgals
		129.6 kgals	2053	C2	3	Barley (silage)	415 kgals	2342 kgals
		148.3 kgals	2053	D1	7	Wheat (grain)	979 kgals	3321 kgals
		148.3 kgals	2053	D2	12	Wheat (grain)	1735 kgals	5055 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2013Sp	Swine Effluent	248.9 kgals	2053	A1	11	Corn (grain)	2613 kgals	2613 kgals
		255.3 kgals	2053	A3	5	Corn (grain)	1225 kgals	3839 kgals
		284.3 kgals	2053	C1	13	Bermudagrass (hay), maint	3724 kgals	7563 kgals
		386.2 kgals	2053	C2	3	Bermudagrass (hay), maint	1236 kgals	8799 kgals
2013Fa	Swine Effluent	139.5 kgals	2053	A1	11	Wheat (grain)	1465 kgals	1465 kgals
		141.4 kgals	2053	A3	5	Wheat (grain)	679 kgals	2144 kgals
		129.6 kgals	2053	C2	3	Barley (silage)	415 kgals	2558 kgals
2013Su	Swine Effluent	203.7 kgals	2053	B	13	Sorghum (grain)	2648 kgals	2648 kgals
		203.7 kgals	2053	D1	7	Sorghum (grain)	1344 kgals	3993 kgals
		203.7 kgals	2053	D2	12	Sorghum (grain)	2383 kgals	6376 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2014Su	Swine Effluent	203.7 kgals	2053	A1	11	Sorghum (grain)	2139 kgals	2139 kgals
		203.7 kgals	2053	A3	5	Sorghum (grain)	978 kgals	3117 kgals
2014Sp	Swine Effluent	244.7 kgals	2053	B	13	Corn (grain)	3182 kgals	3182 kgals
		284.3 kgals	2053	C1	13	Bermudagrass (hay), maint	3724 kgals	6906 kgals
		370.1 kgals	2053	C2	3	Bermudagrass (hay), maint	1184 kgals	8090 kgals
		244.7 kgals	2053	D1	7	Corn (grain)	1615 kgals	9705 kgals
		244.7 kgals	2053	D2	12	Corn (grain)	2863 kgals	12569 kgals
2014Fa	Swine Effluent	185.2 kgals	2053	B	13	Wheat (grain)	2407 kgals	2407 kgals
		129.6 kgals	2053	C2	3	Barley (silage)	415 kgals	2822 kgals
		185.2 kgals	2053	D1	7	Wheat (grain)	1222 kgals	4045 kgals
		185.2 kgals	2053	D2	12	Wheat (grain)	2167 kgals	6211 kgals

NUTRIENT MANAGEMENT PLAN IDENTIFICATION

Operator
Murphy-Brown LLC
434 East Main Street
Waverly, VA 23890
(804)-834-1229

Integrator:*None*

Farm Coordinates
Easting: 318600, Northing: 4109000, zone: 17

Watershed Summary
watershed: CU56
county: Surry

Nutrient Management Planner
R.O. Britt
434 East Main Street
Waverly, VA 23890

Certification Code: 571

Acreage Use Summary
Total Acreage in this plan: 250.7

Cropland:	135.4
Hayland:	115.3
Pasture:	0.
Specialty:	0.

Livestock Summary

Beef Cattle	0
Dairy Cattle	0
Poultry	0
Swine	31500
Other	0

Manure Production Balance

	Imported	Produced	Exported	Used	Net
kgals	0.	30989.7	0.	29266.8	1722.9
tons	0.	0.	0.	0.	0.

Plan written 3/1/2015
Valid until 3/1/2018

Signature: _____ 3/2/2015
Planner **date**

Narrative Farms 9,10-21

This nutrient management plan is a full revision for Murphy-Brown LLC farms 8509, 8510, 8521; covered by permit number VPA00574. These farms are located on Rt. 40, in Surry County approximately 8 miles east of Waverly.

Farm Description

This site is comprised of three 10,500 head wean to finish swine facilities operated by Murphy-Brown LLC. The swine waste is stored and treated at the site by a two stage anaerobic lagoon system. Under normal circumstances, effluent from the two stage aerobic lagoon system is land applied with irrigation equipment to bermuda hay, small grain hay and row crops. In order to balance effluent utilization, effluent from any lagoon may be applied to any field. Nutrient content of the effluent in this plan is based on an average value of yearly lagoon analysis. There are 250.7 acres of hay and row crop land available for land application.

Lagoon Analysis

The contents of the lagoon are sampled and sent to an approved laboratory to establish the nutrient content of both the primary and secondary lagoons. Irrigation is typically conducted with effluent from the secondary lagoon; however irrigation may be conducted from either the Secondary or the Primary lagoon. The appropriate effluent analysis shall be used based on which lagoon the effluent is being irrigated from.

Cover Crop

Cover crop should be planted early enough in the fall to be quickly established after the harvested crop. The main purpose of the cover crop is to scavenge residual nitrogen from the previous crop. However, fields designated to be a cover crop may also be used to spread nutrients through the fall and early winter to assure adequate storage capacity is available until spring application can begin. The cover crop needs to be planted by November 15.

Commercial Fertilizer

Commercial fertilizer recommendations are included in this nutrient management plan and may be used to supplement crop nutrient needs if effluent application is insufficient to meet the agronomic requirements of the crop. Any commercial fertilizer application will be incorporated in the application records for the farm and will not exceed the nutrient recommendations in this plan. All commercial fertilizer application shall be made in accordance with guidance outlined within this plan.

Use of hog manure effluent in cropping rotations:

Soybeans – (double crop and full season) Effluent applications may begin no more than 30 days prior to planting of the soybeans. However, effluent application is not recommended prior to growth stage V6 (six unfolded trifoliate leaves). Nitrogen needs will be established using expected yield for corn based on the soil productivity for the field. Effluent applications may continue until growth stage R6 (full-seed stage) but not later than September 30.

Nutrient Management Plan Special Conditions for Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge Elimination System (VPDES) Permits

September 2011

The following management practices will be utilized for <u>swine operations</u> requiring a VPA or VPDES permit:

1. Soil samples for manure application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least twenty (20) cores randomly sampled throughout the field. Soil sampling core depth will be from 0-4 inches for land which has not been tilled within the past three (3) years, or 0-6 inches for land that has been tilled within the past three (3) years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.

2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
   - A&L Eastern Laboratories
   - Agri-Analysis Testing Laboratory
   - AgroLab
   - Brookside Laboratories
   - Logan Labs
   - Midwest Laboratories (must request Mehlich III)
   - Spectrum Analytical Laboratories
   - Virginia Tech Soil Testing Lab
   - Waters Agricultural Laboratories (GA)

3. Representative manure samples will be analyzed at a minimum of once per year for VPA permits and twice per year for VPDES permits for the following: total nitrogen or total Kjeldahl nitrogen (TKN), ammonium nitrogen, total phosphorus, total potassium, calcium, magnesium, and percent (%) moisture. Separate samples shall be taken from all manure sources to be used for application (i.e. under-house, lagoon, compost, etc.). All manure analyses shall be performed using laboratory methods consistent with *Recommended Methods of Manure Analysis*, publication A3769, University of Wisconsin, 2003 or other methods approved by the Virginia Department of Conservation and Recreation (DCR). Manure analysis results will be used to determine actual manure rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent manure analysis results (not greater than 1 year old) or the facility's average results based on actual manure analysis.

4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.

5. Make manure applications at or near planting or to existing actively growing crops to ensure that nutrients are properly utilized. Utilize the spreading schedule contained in the nutrient management plan and the spreading schedule in #26 of this document to determine appropriate manure application times and rates. Additional commercial

fertilizer applications (especially nitrogen) should be made as a split application separate from the manure applications, either as a sidedress or topdress application.

6. For permanent hay or pasture, an adequate stand of hay and/or pasture crop species will be established prior to land application of manure. Commercially acceptable stands of the listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

7. Manure will be applied to application sites in a uniform manner.

8. Do not spread manure within the following setback areas:
   - 100 feet from wells or springs
   - 35 feet from surface waters if the entire setback is a permanent perennial vegetated buffer
   - **OR**
   - 100 feet from surface waters if there is not a permanent perennial vegetated buffer of at least 35 feet in width
   - 50 feet from sinkholes*
   - 50 feet from limestone rock outcrops
   - 25 feet from other rock outcrops
   - 10 feet from agricultural drainage ditches (5 feet if injected)
   - 200 feet from occupied dwellings (unless waived in writing by the occupant)

   *Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.

9. To avoid manure runoff from application fields*:
   - Do not spread manure on soils that are saturated.
   - Do not apply liquid manure (above 85% moisture content) or commercial fertilizers to frozen, ice or snow-covered ground.

   *If runoff is observed, reduce the application rate immediately to prevent overland flow, which reaches buffer areas or accumulates in low-lying areas.

10. For odor control and to reduce drift, avoid spreading on windy days.

11. Liquid irrigation systems will be operated in a manner to prevent runoff into buffered areas and low-lying areas. Use a liquid application rate at or below the specified maximum hydraulic application rate for each field per application. Traveling guns used for irrigation of effluent should be operated in a full circle pattern whenever possible to allow for maximum infiltration. A small wedge shaped area may be left dry ahead of the gun to reduce soil compaction.

12. Spreader calibration is extremely critical to ensure proper application rates. Calibration

of equipment or verification of actual equipment application rates shall occur at a minimum of once per year.

13. New waste storage facilities shall be designed, constructed and operated in accordance with the USDA-NRCS *Field Office Technical Guide* and other appropriate NRCS design criteria.

14. Earthen waste storage structures must be regularly inspected and repaired if leaks, slope failures, excessive embankment settlement, eroded banks, or burrowing animals are detected. A protective cover of appropriate vegetation will be established and maintained on all disturbed areas (lagoon and storage pit embankments, berms, pipe runs, etc.). Vegetation such as trees, shrubs and other woody species are limited to areas considered to be appropriate such as wind breaks or visual screens, and are not to be present on lagoon and storage pit embankments, berms, or pipe runs.

15. New lagoons will be charged to at least ½ of treatment volume capacity with water prior to placement of hogs into production facilities in order to promote biological treatment activity and to reduce odor. When charging lagoons, carefully manage the rate of the water input to avoid damage to lagoon liners.

16. For operations with anaerobic lagoons, pumping shall be managed to maintain the lagoon level between the maximum and minimum operating level. The lagoon level shall be pumped to near the minimum operating level in preparation for the late fall-winter period. The effluent removed shall be uniformly applied, to the designated fields in the nutrient management plan, at or below the maximum rate specified in the plan. Visible markers or another practical method shall be used in new lagoons to indicate the minimum and maximum operating levels based on the lagoon design specifications.

17. Waste discharge from inlet pipe(s) must not have direct contact with clay liner, in order to avoid erosion of the liner. The discharge line(s) must extend past the minimum operating level such that lagoon influent will discharge over the water surface.

18. Waste handling structures, piping, pumps, etc. should be inspected on a regular basis to prevent breakdowns, leaks and spills.

19. Composting of animal mortalities will be conducted in accordance with the latest guidance developed by Virginia Cooperative Extension.

20. Any facility required in the General Permit to monitor groundwater shall monitor groundwater for the following parameters at a frequency of at least once annually: static water level, ammonia nitrogen, nitrate nitrogen, pH and conductivity.

21. Nutrient management plans that contain fields in which row crops will be grown will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years. Any such plan revisions will be submitted to DCR for review and approval.

22. This nutrient management plan must be amended or modified and submitted to DCR for review and approval if animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is

applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; and/or manure application fields have Mehlich I soil phosphorus levels at or above 55ppm (110 lbs/acre) where either cropping systems, rotations, or fields are changed.

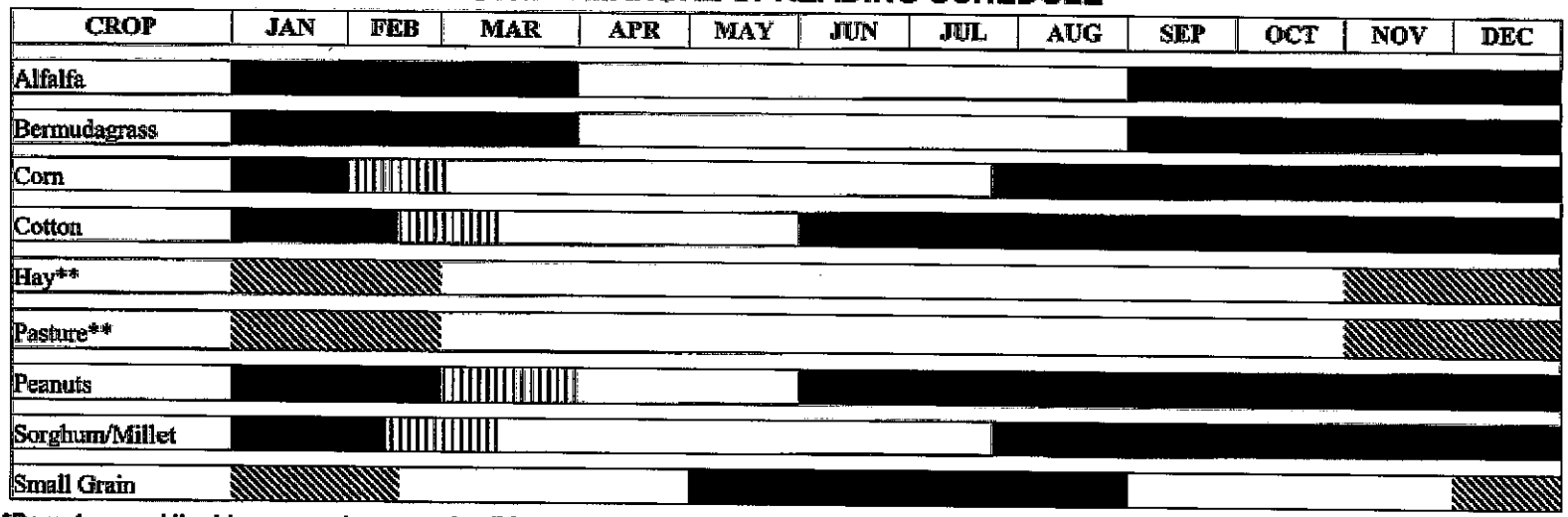
23. Minor plan amendments involving changes to the cropping system, crop rotations, specific application fields, manure analysis results or minor fluctuations in animal market weights or animal numbers (10% or less cumulative increases since this original plan was developed) may be made to this nutrient management plan without he prior approval of DCR by the specific certified nutrient management planner that developed this plan. Any such plan amendments must be made prior to subsequent nutrient application to fields impacted by the change. Certified nutrient management planners shall provide a copy of any such plan amendments to DCR within two (2) weeks of the plan modification.

24. All major plan modifications shall be submitted to DCR for review and approval prior to implementing any changes. Major modifications include, but are not limited to, proposed changes to the plan expiration date; increases in animal numbers of greater than 10%; changes in animal type including intended market weight; additional imported manure, biosolids, or industrial wastes not included in the original plan are to be applied; or available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan due to sale of land, expired lease, etc.

25. These conditions do not override any more restrictive plan requirements if required by other specific legislative, regulatory or incentive programs which apply to a specific operator.26. Manure spreading schedule:

6. Manure spreading schedule.

SWINE MANURE SPREADING SCHEDULE*



*Do not spread liquid manure, dry or semi solid manure on soils that are saturated.

*Do not spread liquid manure/effluent (above 85.5% moisture content) to frozen, ice or snow covered ground.

*Application of dry or semi solid manure (85.5% moisture content or less) should be avoided on frozen, ice or snow covered ground. If necessary applications may be made to fields that have: (i) slopes not greater than 6.0%, (ii) 60% uniform ground cover from crop residue or an existing actively growing crop such as a small grain or tall fescue with an exposed plant height of ≥ 3", (iii) a minimum 200-foot vegetated or adequate crop residue buffer between the application area and all surface water courses, and (iv) soils characterized by USDA as "well drained".

** Cool season grasses only, Fescue and or Orchardgrass

Spread liquid manure and dry or semi solid manure at the rates and times specified in the nutrient management plan

Do not spread liquid manure and dry or semi solid manure during these shaded months.

Manure applications will not be made earlier than 30 days prior to planting on environmentally sensitive sites.
On fields <u>not listed as environmentally sensitive</u>:

- Liquid manure applications will not occur more than 60 days prior to spring planting.

Manure applications are not recommended during this period (late fall-winter). If necessary uniformly apply a maximum of 3,000 gallons per acre per application. If using an irrigation system apply up to a maximum of a ¼ inch per acre per hour. Do not exceed 40 pounds of plant available nitrogen per acre during this entire period. Allow sufficient drying time between applications. Fields must have greater than 60% uniform live cover with plant height greater than three (3) inches.

Nutrient Management Plan Balance Sheet
(Spring, 2015-Spring, 2018)
8509,8510 and 8521
Planner: R.O. Britt (cert. No. 571)

Tract: 612 **Location: Surry**
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
913/E2(N)	49/49	2015	Corn (grain)	130-0-0	0/0	22.7k Wean t(Sp)	N/A	33-13-229	20-(45)-(765)	N/A		1,2,3	
						53.1k Wean t(Su)	N/A	77-31-536				1,4,3,5	
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-(60)-(1045)	N/A		1,6	
		2016	Soybeans (FS)	130-0-0	0/7	25.8k Wean t(Sp)	N/A	37-15-260	0-(110)-(1900)	N/A		1,3	
						59.k Wean t(Su)	N/A	85-35-595				1,3	
			Rye (cover)	40-0-0	17/0	27.7k Wean t(Fa)	N/A	40-16-279	(15)-(125)-(2180)	N/A		1,6	
		2017	Corn (grain)	130-0-0	0/11	22.7k Wean t(Sp)	N/A	33-13-229	15-(165)-(2895)	N/A		1,3,2	
						48.3k Wean t(Su)	N/A	70-28-487				1,3,4	
			Rye (cover)	40-0-0	0/0	27.6k Wean t(Fa)	N/A	40-16-278	0-(180)-(3175)	N/A		1,6	
913/F(N)	31/31	2015	Soybeans (FS)	100-60-0	0/0	20.6k Wean t(Sp)	N/A	30-12-208	0-20-(695)	N/A		1,3	
						48.5k Wean t(Su)	N/A	70-29-489				1,3	
			Rye (cover)	40-0-0	13/0	20.6k Wean t(Fa)	N/A	30-12-208	(5)-10-(905)	N/A		1,6	
		2016	Corn (grain)	100-60-0	0/6	19.6k Wean t(Sp)	N/A	28-12-198	5-35-(1520)	N/A		1,3,2	
						41.4k Wean t(Su)	N/A	60-24-418				1,3,2	
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-20-(1800)	N/A		1,6	
		2017	Soybeans (FS)	100-60-0	0/9	18.6k Wean t(Sp)	N/A	27-11-188	0-45-(2440)	N/A		1,3	
						44.6k Wean t(Su)	N/A	64-26-450				1,3	
			Rye (cover)	40-0-0	13/0	20.6k Wean t(Fa)	N/	30-12-208	(5)-35-(2650)	N/A		1,6	

							A						
913/G(N)	10/10	2015	Soybeans (FS)	100-80-20	0/0	20.7k Wean t(Sp)	N/A	30-12-209	0-40-(675)	N/A		1,3	
						48.4k Wean t(Su)	N/A	70-29-488				1,3	
			Rye (cover)	40-0-0	13/0	20.6k Wean t(Fa)	N/A	30-12-208	(5)-30-(885)	N/A		6	
		2016	Corn (grain)	100-80-20	0/6	18.6k Wean t(Sp)	N/A	27-11-188	5-75-(1470)	N/A		1,3,2	
						41.4k Wean t(Su)	N/A	60-24-418				1,3,4	
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-60-(1750)	N/A			
		2017	Soybeans (FS)	100-80-20	0/9	18.6k Wean t(Sp)	N/A	27-11-188	0-105-(2365)	N/A		1,3	
						44.5k Wean t(Su)	N/A	64-26-449				1,3	
			Rye (cover)	40-0-0	13/0	27.7k Wean t(Fa)	N/A	40-16-279	(15)-90-(2645)	N/A		6	

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,439 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

2 Band nitrogen with planter

3 Commercial fertilizer may be used in conjunction with or to substitute for lagoon effluent. The total nitrogen applied shall not exceed the recommended rate established in the Nutrient Management Plan.

4 Apply side dress nitrogen when crop is 12 to 14 inches tall. A pre-side dress tissue sample is recommended prior to nitrogen application.

5 Lagoon effluent may be applied in conjunction with or in place of commercial fertalizer. Effluent application shall not exceed the total nitrogen recommendation for the field.

6 The primary purpose of a cover crop is to scavenge residual nitrogen from previous crop. Nutrients may be applied to cover crop at low rates in the fall-winter to manage effluent storage. The crop must be planted by November 15th.

Tract: 665 **Location: Surry**
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
913/C1(N)	18/18	2015	Bermudagrass hay mt.	270-0-0	0/0	41.3k Wean t(Sp)	N/A	60-24-417	70-(80)-(1390)	N/A	35-0-0(td)	1,2,3,4,	
						96.5k Wean t(Su)	N/A	139-57-974			35-0-0(td)	1,2,3,4,	
		2016	... ...	270-0-0	0/10	41.3k Wean t(Sp)	N/A	60-24-417	60-(160)-(2780)	N/A	30-0-0(td)	1,2,3,4,	
						96.5k Wean t(Su)	N/A	139-57-974			30-0-0(td)	1,2,3,4,	
		2017	... ...	270-0-0	0/14	41.3k Wean t(Sp)	N/A	60-24-417	55-(240)-(4170)	N/A	26-0-0(td)	1,2,3,4,	
						96.5k Wean t(Su)	N/A	139-57-974			26-0-0(td)	1,2,3,4,	
913/C2(N)	13/13	2015	Fescue grass hay mt.	90-0-0	0/0	24.1k Wean t(Sp)	N/A	35-14-243	0-(35)-(630)	N/A		1	
						15.5k Wean t(Su)	N/A	22-9-156				1	
						22.7k Wean t(Fa)	N/A	33-13-229				1	
		2016	... ...	90-0-0	0/4	24.1k Wean t(Sp)	N/A	35-14-243	0-(70)-(1230)	N/A		1	
						15.5k Wean t(Su)	N/A	22-9-156				1	
						19.6k Wean t(Fa)	N/A	28-12-198				1	
		2017	... ...	90-0-0	0/6	24.1k Wean t(Sp)	N/A	35-14-243	0-(105)-(1815)	N/A		1	
						15.5k Wean t(Su)	N/A	22-9-156				1	
						18.5k Wean t(Fa)	N/A	27-11-187				1	
913/D(N)	16/16	2015	Bermudagrass hay mt.	270-0-0	0/0	41.3k Wean t(Sp)	N/A	60-24-417	70-(80)-(1390)	N/A	35-0-0(td)	1,2,3,4,	
						96.6k Wean t(Su)	N/A	140-57-975			35-0-0(td)	1,2,3,4,	
		2016	... ...	270-0-0	0/10	41.3k Wean t(Sp)	N/A	60-24-417	60-(160)-(2780)	N/A	30-0-0(td)	1,2,3,4,	
						96.6k Wean t(Su)	N/A	140-57-975			30-0-0(td)	1,2,3,4,	
		2017	... ...	270-0-0	0/14	41.3k Wean t(Sp)	N/A	60-24-417	55-(240)-(4170)	N/A	27-0-0(td)	1,2,3,4,	
						96.6k Wean t(Su)	N/A	140-57-975			27-0-0(td)	1,2,3,4,	
913/E1(N)	32/32	2015	Bermudagrass hay	235-0-0	0/0	41.3k Wean t(Sp)	N/	60-24-417	35-(80)-(1390)	N/A	35-0-0(td)	1,2,3,4,	

			mt.			96.5k Wean t(Su)	A N/ A	139-57-974			35-0-0(td)	1,2,3,4,	
		2016	... ...	235-0-0	0/10	41.3k Wean t(Sp)	N/ A	60-24-417	25-(160)-(2780)	N/A	25-0-0(td)	1,2,3,4,	
						96.3k Wean t(Su)	N/ A	139-57-972			25-0-0(td)	1,2,3,4,	
		2017	... ...	235-0-0	0/14	41.3k Wean t(Sp)	N/ A	60-24-417	20-(240)-(4170)	N/A	20-0-0(td)	1,2,3,4,	
						96.3k Wean t(Su)	N/ A	139-57-972			20-0-0(td)	1,2,3,4,	

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,439 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

2 Commercial fertilizer may be used in conjunction with or to substitute for lagoon effluent. The total nitrogen applied shall not exceed the recommended rate established in the Nutrient Management Plan.

3 It is recommended that commercial fertalizer applications be split and applied following each hay cutting. No one commercial fertalizer application should exceed 1/2 of the total fertalizer recommendation for the field.

4 Lagoon effluent may be applied in conjunction with or in place of commercial fertalizer. Effluent application shall not exceed the total nitrogen recommendation for the field.

Tract: 667 **Location: Surry**

(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
913/A1(N)	16/16	2015	Soybeans (FS)	130-60-0	0/0	26.9k Wean t(Sp)	N/A	39-16-271	0-5-(910)	N/A		1,2
						63.1k Wean t(Su)	N/A	91-37-636				1,2
			Rye (cover)	40-0-0	15/0	27.4k Wean t(Fa)	N/A	40-16-276	(15)-(10)-(1185)	N/A		1,3
		2016	Corn (grain)	120-60-0	0/8	20.k Wean t(Sp)	N/A	29-12-202	15-10-(1875)	N/A		1,2,4
						48.3k Wean t(Su)	N/A	70-28-487				1,2,5
			Rye (cover)	40-0-0	0/0	27.6k Wean t(Fa)	N/A	40-16-278	0-(5)-(2155)	N/A		1,3
		2017	Soybeans (FS)	130-60-0	0/10	26.9k Wean t(Sp)	N/A	39-16-271	0-5-(2990)	N/A		1,2
						56.k Wean t(Su)	N/A	81-33-565				1,2
			Rye (cover)	40-0-0	15/0	27.6k Wean t(Fa)	N/A	40-16-278	(15)-(10)-(3270)	N/A		1,3
913/A2(N)	13/13	2015	Soybeans (FS)	120-0-0	0/0	25.k Wean t(Sp)	N/A	36-15-252	0-(50)-(840)	N/A		1,2
						58.k Wean t(Su)	N/A	84-34-586				1,2
			Rye (cover)	40-0-0	14/0	27.5k Wean t(Fa)	N/A	40-16-277	(15)-(65)-(1115)	N/A		1,3
		2016	Corn (grain)	120-0-0	0/8	19.6k Wean t(Sp)	N/A	28-12-198	0-(110)-(1900)	N/A		1,4,2
						58.k Wean t(Su)	N/A	84-34-585				1,2,5
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-(125)-(2180)	N/A		1,3
		2017	Soybeans (FS)	120-0-0	0/11	22.7k Wean t(Sp)	N/A	33-13-229	0-(170)-(2945)	N/A		1,2
						52.9k Wean t(Su)	N/A	76-31-534				
			Rye (cover)	40-0-0	14/0	27.7k Wean t(Fa)	N/A	40-16-279	(15)-(185)-(3225)	N/A		1,3
913/A3(N)	16/16	2015	Bermudagrass hay mt.	235-0-0	0/0	48.6k Wean t(Sp)	N/A	70-29-490	0-(95)-(1640)	N/A		1,2,6
						114.k Wean t(Su)	N/A	165-67-1150				1,2,6
		2016	... ...	235-0-0	0/12	46.5k Wean t(Sp)	N/A	67-27-469	0-(185)-(3200)	N/A		1,2,6
						108.2k Wean t(Su)	N/	156-64-1091				1,2,6

		2017	... ...	235-0-0	0/16	45.5k Wean t(Sp) 106.2k Wean t(Su)	AN/A N/A	66-27-459 153-63-1072	0-(275)-(4730)	N/A		1,2,6 1,2,6	

Tract: 667 **Location: Surry**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
913/B1(N)	18/18	2015	Corn (grain)	130-0-0	0/0	26.8k Wean t(Sp)	N/A	39-16-270	0-(55)-(910)	N/A		1,4,2
						63.2k Wean t(Su)	N/A	91-37-637				1,2,5
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-(70)-(1190)	N/A		1,3
		2016	Soybeans (FS)	130-0-0	0/8	24.8k Wean t(Sp)	N/A	36-15-250	0-(120)-(2040)	N/A		1,2
						59.4k Wean t(Su)	N/A	86-35-599				1,2
			Rye (cover)	40-0-0	17/0	27.7k Wean t(Fa)	N/A	40-16-279	(15)-(135)-(2320)	N/A		1,3
		2017	Corn (grain)	130-0-0	0/11	31.5k Wean t(Sp)	N/A	46-19-318	0-(185)-(3150)	N/A		1,2,4
						50.6k Wean t(Su)	N/A	73-30-510				1,2,5
			Rye (cover)	40-0-0	0/0	27.7k Wean t(Fa)	N/A	40-16-279	0-(200)-(3430)	N/A		1,3
913/B2(N)	21/21	2015	Bermudagrass hay mt.	235-0-0	0/0	70.5k Wean t(Sp)	N/A	102-42-711	0-(95)-(1640)	N/A		1,2,6
						92.1k Wean t(Su)	N/A	133-54-929				1,2,6
		2016	... ...	235-0-0	0/12	46.5k Wean t(Sp)	N/A	67-27-469	0-(185)-(3200)	N/A		1,2,6
						108.2k Wean t(Su)	N/A	156-64-1091				1,2,6
		2017	... ...	235-0-0	0/16	66.k Wean t(Sp)	N/A	95-39-666	0-(275)-(4730)	N/A		1,2,6
						85.7k Wean t(Su)	N/A	124-51-865				1,2,6

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,439 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

2 Commercial fertilizer may be used in conjunction with or to substitute for lagoon effluent. The total nitrogen applied shall not exceed the recommended rate established in the Nutrient Management Plan.

3 The primary purpose of a cover crop is to scavenge residual nitrogen from previous crop. Nutrients may be applied to cover crop at low rates in the fall-winter to manage effluent storage. The crop must be planted by November 15th.

4 Band nitrogen with planter

5 Apply side dress nitrogen when crop is 12 to 14 inches tall. A pre-side dress tissue sample is recommended prior to nitrogen application.

6 It is recommended that commercial fertalizer applications be split and applied following each hay cutting. No one commercial fertalizer application should exceed 1/2 of the total fertalizer recommendation for the field.

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
612	E2	49	2014-Fa	VH (115 P lbs/acre)	VH (714 K lbs/acre)	Virginia Tech	7.		
612	F	31	2014-Fa	M (30 P lbs/acre)	VH (451 K lbs/acre)	Virginia Tech	6.6		
612	G	10	2014-Fa	M- (20 P lbs/acre)	H+ (299 K lbs/acre)	Virginia Tech	6.8		
665	C1	18	2014-Fa	VH (275 P lbs/acre)	VH (742 K lbs/acre)	Virginia Tech	7.8		
665	C2	13	2014-Fa	VH (257 P lbs/acre)	VH (727 K lbs/acre)	Virginia Tech	8.3		
665	D	16	2014-Fa	VH (202 P lbs/acre)	VH (648 K lbs/acre)	Virginia Tech	7.6		
665	E1	32	2014-Fa	VH (238 P lbs/acre)	VH (743 K lbs/acre)	Virginia Tech	7.6		
667	A1	16	2014-Fa	M (23 P lbs/acre)	VH (457 K lbs/acre)	Virginia Tech	6.5		
667	A2	13	2014-Fa	VH (324 P lbs/acre)	VH (1095 K lbs/acre)	Virginia Tech	7.6		
667	A3	16	2014-Fa	VH (357 P lbs/acre)	VH (1054 K lbs/acre)	Virginia Tech	7.9		
667	B1	18	2014-Fa	VH (115 P lbs/acre)	VH (680 K lbs/acre)	Virginia Tech	7.5		
667	B2	21	2014-Fa	VH (115 P lbs/acre)	VH (682 K lbs/acre)	Virginia Tech	7.6		

Manure Production Summary

Manure Name: Wean to Finish

Animal Summary
Feeder Swine: 31500

Manure Storage Capacity: 31556.8 kgals

Manure Analysis:
TKN: 2.89
P2O5: .59
NH4: 2.3
K2O: 10.09

Plant Available Nutrients:
Immediate Incorporation:
2.37 lbs N
.59 lbs P2O5
10.09 lbs K2O
Surface Applied:
1.33 lbs N
.59 lbs P2O5
10.09 lbs K2O
Residual N:
yr 1: .07 lbs
yr 2: .03 lbs
yr 3: .01 lbs

Manure Production

Dec-Feb	7747
Mar-May	7747
Jun-Aug	7747
Sep-Nov	7747

Total Produced: 30990
Manure Sold/yr: 0
Manure purch./yr: 0

Liquid Manure Production Details

production [kgal/yr] = (# confined)[animals] * (avg wt)[animal-lbs/animal] * (prod factor)[gal/yr/animal-lb] * (0.001)[kgal/gal] + (# confined)[animals] * (waste-water)[gal/day/animal] * (365)[day/yr] * (0.001)[kgal/gal]

Group Name	animal type	%(#) confined	avg wt	prod factor	waste water	production
Wean to Finish	Feeder Swine	100(31500)	135.0	2.74	1.4	27748.4

Net Precipitation Excess

NPE [kgal/yr] = {precip (44.[in/yr]) - evap (40.[in/yr])} * pit/lagoon factor (0.9) * surface area (650000.[sq-ft]) * (1/12)[ft/in] * (7.48)[gal/cu-ft] * (0.001)[kgal/gal] = 3241.33[kgal/yr]

Erosion Calculations for 612: E2

Erosion Risk Assessment

Soil
MU Symbol = 28C
Region = Coastal Plain
Slope Class = C

2015
Crop Type = Crop
TC = 2.78

2016
Crop Type = Crop
TC = 2.78

2017
Crop Type = Crop
TC = 2.78

Avg TC for Soil
Sum TC = 8.34
Avg soil TC over years = 8.34/3 = 2.78

TC x K for soil
K factor = 0.21
add to avg TCxSE: (TC * SE * pct) = 2.78*0.21*0.3
avg. TCxK for field so far = 0.17514

Soil
MU Symbol = 33A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 0.44*0.2*0.5
avg. TCxK for field so far = 0.21914

Soil
MU Symbol = 10A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.32
add to avg TCxSE: (TC * SE * pct) = 0.44*0.32*0.1
avg. TCxK for field so far = 0.23322

Soil
MU Symbol = 33B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016

Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.41*0.2*0.1
avg. TCxK for field so far = 0.26142

Avg. TCxK for Field
Field avg. TCxK = 0.26142

For the whole Field
TCxK = 0.26142
TM = 3.33333333333333
Soil Loss = TCxSE * TM = 0.871399999999999

Erosion Calculations for 612: F

Erosion Risk Assessment

Soil
MU Symbol = 10A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil

Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.32
add to avg TCxSE: (TC * SE * pct) = 0.44*0.32*0.85
avg. TCxK for field so far = 0.11968

Soil
MU Symbol = 11B3
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.24
add to avg TCxSE: (TC * SE * pct) = 1.41*0.24*0.05
avg. TCxK for field so far = 0.1366

Soil
MU Symbol = 26B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.41*0.2*0.1
avg. TCxK for field so far = 0.1648

Avg. TCxK for Field
Field avg. TCxK = 0.1648

For the whole Field
TCxK = 0.1648
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 0.933866666666667

Erosion Calculations for 612: G

Erosion Risk Assessment

Soil
MU Symbol = 26B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.41*0.2*0.2
avg. TCxK for field so far = 0.0564

Soil
MU Symbol = 11B3
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.24
add to avg TCxSE: (TC * SE * pct) = 1.41*0.24*0.2
avg. TCxK for field so far = 0.12408

Soil
MU Symbol = 10A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017

Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.32
add to avg TCxSE: (TC * SE * pct) = 0.44*0.32*0.6
avg. TCxK for field so far = 0.20856

Avg. TCxK for Field
Field avg. TCxK = 0.20856

For the whole Field
TCxK = 0.20856
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 1.18184

Erosion Calculations for 665: C1

Erosion Risk Assessment

Soil
MU Symbol = 33B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil

K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.8
avg. TCxK for field so far = 0.1984

Soil
MU Symbol = 31A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017
Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil
Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.24
add to avg TCxSE: (TC * SE * pct) = 0.4*0.24*0.1
avg. TCxK for field so far = 0.208

Soil
MU Symbol = 26B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.1
avg. TCxK for field so far = 0.2328

Avg. TCxK for Field
Field avg. TCxK = 0.2328

For the whole Field
TCxK = 0.2328
TM = 1
Soil Loss = TCxSE * TM = 0.2328

Erosion Calculations for 665: C2

Erosion Risk Assessment

Soil
MU Symbol = 33B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*1

avg. TCxK for field so far = 0.248

Avg. TCxK for Field
Field avg. TCxK = 0.248

For the whole Field
TCxK = 0.248
TM = 1
Soil Loss = TCxSE * TM = 0.248

Erosion Calculations for 665: D

Erosion Risk Assessment

Soil
MU Symbol = 33B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.4
avg. TCxK for field so far = 0.0992

Soil
MU Symbol = 35B
Region = Coastal Plain
Slope Class = B

2015

Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.3
avg. TCxK for field so far = 0.1736

Soil
MU Symbol = 31A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017
Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil
Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.24
add to avg TCxSE: (TC * SE * pct) = 0.4*0.24*0.1
avg. TCxK for field so far = 0.1832

Soil
MU Symbol = 26B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.2
avg. TCxK for field so far = 0.2328

Avg. TCxK for Field
Field avg. TCxK = 0.2328

For the whole Field
TCxK = 0.2328
TM = 1
Soil Loss = TCxSE * TM = 0.2328

Erosion Calculations for 665: E1

Erosion Risk Assessment

Soil
MU Symbol = 14B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 1.24*0.28*0.6
avg. TCxK for field so far = 0.20832

Soil
MU Symbol = 28B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.21
add to avg TCxSE: (TC * SE * pct) = 1.24*0.21*0.4
avg. TCxK for field so far = 0.31248

Avg. TCxK for Field
Field avg. TCxK = 0.31248

For the whole Field
TCxK = 0.31248
TM = 1
Soil Loss = TCxSE * TM = 0.31248

Erosion Calculations for 667: A1

Erosion Risk Assessment

Soil
MU Symbol = 14A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.44*0.28*0.2
avg. TCxK for field so far = 0.02464

Soil
MU Symbol = 17A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016

Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.44*0.28*0.2
avg. TCxK for field so far = 0.04928

Soil
MU Symbol = 10A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.32
add to avg TCxSE: (TC * SE * pct) = 0.44*0.32*0.6
avg. TCxK for field so far = 0.13376

Avg. TCxK for Field
Field avg. TCxK = 0.13376

For the whole Field

TCxK = 0.13376
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 0.757973333333334

Erosion Calculations for 667: A2

Erosion Risk Assessment

Soil
MU Symbol = 26B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.41*0.2*0.25
avg. TCxK for field so far = 0.0705

Soil
MU Symbol = 28B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.21
add to avg TCxSE: (TC * SE * pct) = 1.41*0.21*0.75
avg. TCxK for field so far = 0.292575

Avg. TCxK for Field
Field avg. TCxK = 0.292575

For the whole Field
TCxK = 0.292575
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 1.657925

Erosion Calculations for 667: A3

Erosion Risk Assessment

Soil
MU Symbol = 28C
Region = Coastal Plain
Slope Class = C

2015
Crop Type = Hay or Pasture
TC = 2.48

2016
Crop Type = Hay or Pasture
TC = 2.48

2017
Crop Type = Hay or Pasture
TC = 2.48

Avg TC for Soil
Sum TC = 7.44
Avg soil TC over years = 7.44/3 = 2.48

TC x K for soil
K factor = 0.21
add to avg TCxSE: (TC * SE * pct) = 2.48*0.21*0.35
avg. TCxK for field so far = 0.18228

Soil
MU Symbol = 28B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.21
add to avg TCxSE: (TC * SE * pct) = 1.24*0.21*0.6
avg. TCxK for field so far = 0.33852

Soil
MU Symbol = 2A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017

Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil
Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.4*0.28*0.05
avg. TCxK for field so far = 0.34412

Avg. TCxK for Field
Field avg. TCxK = 0.34412

For the whole Field
TCxK = 0.34412
TM = 1
Soil Loss = TCxSE * TM = 0.34412

Erosion Calculations for 667: B1

Erosion Risk Assessment

Soil
MU Symbol = 33A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil

K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 0.44*0.2*0.4
avg. TCxK for field so far = 0.0352

Soil
MU Symbol = 35B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.41*0.2*0.4
avg. TCxK for field so far = 0.148

Soil
MU Symbol = 14B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 1.41*0.28*0.2
avg. TCxK for field so far = 0.22696

Avg. TCxK for Field
Field avg. TCxK = 0.22696

For the whole Field
TCxK = 0.22696
TM = 3.33333333333333
Soil Loss = TCxSE * TM = 0.756533333333333

Erosion Calculations for 667: B2

Erosion Risk Assessment

Soil
MU Symbol = 14B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 1.24*0.28*0.3

avg. TCxK for field so far = 0.10416

Soil
MU Symbol = 12B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.32
add to avg TCxSE: (TC * SE * pct) = 1.24*0.32*0.3
avg. TCxK for field so far = 0.2232

Soil
MU Symbol = 31A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017
Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil

Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.24
add to avg TCxSE: (TC * SE * pct) = 0.4*0.24*0.3
avg. TCxK for field so far = 0.252

Soil
MU Symbol = 33B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.2
add to avg TCxSE: (TC * SE * pct) = 1.24*0.2*0.1
avg. TCxK for field so far = 0.2768

Avg. TCxK for Field
Field avg. TCxK = 0.2768

For the whole Field
TCxK = 0.2768
TM = 1
Soil Loss = TCxSE * TM = 0.2768

612: E2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 1553
riparian buffer width (ft) = 1553
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.87
ERF = erosion * SDF * STPF * 0.002 = 0.21771054

2016

dist. to Stream (ft) = 1553
riparian buffer width (ft) = 1553
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.87
ERF = erosion * SDF * STPF * 0.002 = 0.21771054

2017

dist. to Stream (ft) = 1553
riparian buffer width (ft) = 1553
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.87
ERF = erosion * SDF * STPF * 0.002 = 0.21771054

Averaging over the years
ERF sum = 0.65313162
avg ERF = ERF sum / 3 = 0.21771054

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 1553
riparian buffer width (ft) = 1553
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33A
% of field = 50
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 10A
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.128780992044

MANURE APPLICATION

Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 13.393
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.23410964

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 31.329
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.54763092

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.3253
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.285366244

Sum of All AFDRPF factors = 1.067106804

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.195887796044

2016

distance to stream (ft) = 1553
riparian buffer width (ft) = 1553
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33A
% of field = 50
hydrologic group = C
curve No. = 79

runoff for soil from Table 7 = 3.66

MUSYM: 10A
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.128780992044

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 15.222
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.26608056

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 34.81
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.6084788

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.343
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.28567564

Sum of All AFDRPF factors = 1.160235

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.289015992044

2017

distance to stream (ft) = 1553
riparian buffer width (ft) = 1553
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33A
% of field = 50
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 10A
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.128780992044

MANURE APPLICATION

Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 13.393
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.23410964

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 28.497
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.49812756

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.284
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.28464432

Sum of All AFDRPF factors = 1.01688152

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.145662512044

Averaging over the years
RRF sum = 3.630566300132
Avg RRF = RRF sum / 3 = 1.21018876671067

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 28C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation

runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 33A
% of field = 50
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 10A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 33B
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 10A

Soil Series: Craven(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 28C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 33A
% of field = 50
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 10A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater

Percolation from Tables 12-15 = 18.28

MUSYM: 33B
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 10A

Soil Series: Craven(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 28C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 33A
% of field = 50
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 10A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 33B
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)

soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 10A

Soil Series: Craven(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.21771054
avg RRF = 1.21018876671067
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 12.1371441070407

612: F

Table 5-1 Screening Criteria
pysiographic region = Eastern Shore and Lower Coastal Plain
Soil test P ppm = 15
Therefore N-based

612: G

Table 5-1 Screening Criteria
pysiographic region = Eastern Shore and Lower Coastal Plain
Soil test P ppm = 10

Therefore N-based

665: C1

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 250
riparian buffer width (ft) = 250
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 530.9625

erosion = 0.23
ERF = erosion * SDF * STPF * 0.002 = 0.0976971

2016

dist. to Stream (ft) = 250
riparian buffer width (ft) = 250
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 530.9625

erosion = 0.23
ERF = erosion * SDF * STPF * 0.002 = 0.0976971

2017

dist. to Stream (ft) = 250
riparian buffer width (ft) = 250
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 530.9625

erosion = 0.23

ERF = erosion * SDF * STPF * 0.002 = 0.0976971

Averaging over the years
ERF sum = 0.2930913
avg ERF = ERF sum / 3 = 0.0976971

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 250
riparian buffer width (ft) = 250
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 80
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.392

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.86035

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.1085080027488

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.935
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.9952238

Sum of All AFDRPF factors = 1.42115896

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.5296669627488

2016

distance to stream (ft) = 250
riparian buffer width (ft) = 250
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 80
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.392

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.86035

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.1085080027488

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.935
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.9952238

Sum of All AFDRPF factors = 1.42115896

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.5296669627488

2017

distance to stream (ft) = 250
riparian buffer width (ft) = 250
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 80
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 10
hydrologic group = C
curve No. = 71

runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.392

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.86035

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.1085080027488

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.935
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.9952238

Sum of All AFDRPF factors = 1.42115896

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.5296669627488

Averaging over the years
RRF sum = 4.5890008882464
Avg RRF = RRF sum / 3 = 1.5296669627488

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.01575

MUSYM: 33B
% of field = 80

hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 10
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.448

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075

SRF = percolation * STDF * SDRPF * 0.22651 = 0.249312014217

2016

soil test VT P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.01575

MUSYM: 33B
% of field = 80
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 10
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.448

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075
SRF = percolation * STDF * SDRPF * 0.22651 = 0.249312014217

2017

soil test VT P ppm = 137.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.01575

MUSYM: 33B
% of field = 80
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 10
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.448

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075
SRF = percolation * STDF * SDRPF * 0.22651 = 0.249312014217

Averaging over the years
SRF sum = 0.747936042651
avg SRF = SRF sum / 3 = 0.249312014217

P-Index
avg ERF = 0.0976971
avg RRF = 1.5296669627488
avg SRF = 0.249312014217
P-Index = 8.5 * (ERF + RRF + SRF) = 15.9517466542093

665: C2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 343
riparian buffer width (ft) = 334
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 506.4195

erosion = 0.25
ERF = erosion * SDF * STPF * 0.002 = 0.1012839

2016

dist. to Stream (ft) = 343
riparian buffer width (ft) = 334
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 506.4195

erosion = 0.25
ERF = erosion * SDF * STPF * 0.002 = 0.1012839

2017

dist. to Stream (ft) = 343
riparian buffer width (ft) = 334
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 506.4195

erosion = 0.25
ERF = erosion * SDF * STPF * 0.002 = 0.1012839

Averaging over the years
ERF sum = 0.3038517
avg ERF = ERF sum / 3 = 0.1012839

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 343
riparian buffer width (ft) = 334
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 100

hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.80725

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.11117292008

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 14.219
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.24854812

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 9.145
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1598546

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 13.3753
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.233800244

Sum of All AFDRPF factors = 0.642202964

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 0.75337588408

2016

distance to stream (ft) = 343

riparian buffer width (ft) = 334
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 100
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.80725

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.11117292008

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 14.219
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.24854812

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 9.145
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1598546

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 11.5817
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.202448116

Sum of All AFDRPF factors = 0.610850836

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 0.72202375608

2017

distance to stream (ft) = 343
riparian buffer width (ft) = 334
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 100
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.80725

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.11117292008

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 14.219
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.24854812

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 9.145
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1598546

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 10.9209
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.190897332

Sum of All AFDRPF factors = 0.599300052

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 0.71047297208

Averaging over the years
RRF sum = 2.18587261224
Avg RRF = RRF sum / 3 = 0.72862420408

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.96265

MUSYM: 33B
% of field = 100
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.96265

MUSYM: 33B

% of field = 100
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 128.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.96265

MUSYM: 33B
% of field = 100
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years

SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.1012839
avg RRF = 0.72862420408
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 7.05421888468

665: D

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 350
riparian buffer width (ft) = 300
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 431.427

erosion = 0.23
ERF = erosion * SDF * STPF * 0.002 = 0.079382568

2016

dist. to Stream (ft) = 350
riparian buffer width (ft) = 300
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 431.427

erosion = 0.23
ERF = erosion * SDF * STPF * 0.002 = 0.079382568

2017

dist. to Stream (ft) = 350
riparian buffer width (ft) = 300
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 431.427

erosion = 0.23
ERF = erosion * SDF * STPF * 0.002 = 0.079382568

Averaging over the years
ERF sum = 0.238147704
avg ERF = ERF sum / 3 = 0.079382568

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 350
riparian buffer width (ft) = 300
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 35B
% of field = 30
hydrologic group = A
curve No. = 30
runoff for soil from Table 7 = 0

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 20
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.936

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.645

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.05469944688

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.994
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99625512

Sum of All AFDRPF factors = 1.42219028

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.47688972688

2016

distance to stream (ft) = 350
riparian buffer width (ft) = 300
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 35B
% of field = 30
hydrologic group = A
curve No. = 30
runoff for soil from Table 7 = 0

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 20
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.936

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.645

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.05469944688

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.994
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99625512

Sum of All AFDRPF factors = 1.42219028

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.47688972688

2017

distance to stream (ft) = 350

riparian buffer width (ft) = 300
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 35B
% of field = 30
hydrologic group = A
curve No. = 30
runoff for soil from Table 7 = 0

MUSYM: 31A
% of field = 10
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 26B
% of field = 20
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.936

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.645

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.05469944688

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish

Method: Irrigation w/o incorporation
Applied P2O5: 56.994
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99625512

Sum of All AFDRPF factors = 1.42219028

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.47688972688

Averaging over the years
RRF sum = 4.43066918064
Avg RRF = RRF sum / 3 = 1.47688972688

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.8004

MUSYM: 33B
% of field = 40
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 35B
% of field = 30
hydrologic group = A
crop type = Hay
runoff curve No. from Table 6 = 30
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.84

MUSYM: 31A
% of field = 10
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 20
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.904

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075
SRF = percolation * STDF * SDRPF * 0.22651 = 0.2026555795512

2016

soil test VT P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain

subsurface DRP factor from Table 17 (SDRPF) = 0.8004

MUSYM: 33B
% of field = 40
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 35B
% of field = 30
hydrologic group = A
crop type = Hay
runoff curve No. from Table 6 = 30
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.84

MUSYM: 31A
% of field = 10
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 20
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.904

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)

soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075
SRF = percolation * STDF * SDRPF * 0.22651 = 0.2026555795512

2017

soil test VT P ppm = 101
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.8004

MUSYM: 33B
% of field = 40
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 35B
% of field = 30
hydrologic group = A
crop type = Hay
runoff curve No. from Table 6 = 30
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.84

MUSYM: 31A
% of field = 10
hydrologic group = B

crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 26B
% of field = 20
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.904

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.075
SRF = percolation * STDF * SDRPF * 0.22651 = 0.2026555795512

Averaging over the years
SRF sum = 0.6079667386536
avg SRF = SRF sum / 3 = 0.2026555795512

P-Index
avg ERF = 0.079382568
avg RRF = 1.47688972688
avg SRF = 0.2026555795512
P-Index = 8.5 * (ERF + RRF + SRF) = 14.9508869326652

665: E1

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 1375
riparian buffer width (ft) = 500
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 480.513

erosion = 0.31
ERF = erosion * SDF * STPF * 0.002 = 0.119167224

2016

dist. to Stream (ft) = 1375
riparian buffer width (ft) = 500
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 480.513

erosion = 0.31
ERF = erosion * SDF * STPF * 0.002 = 0.119167224

2017

dist. to Stream (ft) = 1375
riparian buffer width (ft) = 500

sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 480.513

erosion = 0.31
ERF = erosion * SDF * STPF * 0.002 = 0.119167224

Averaging over the years
ERF sum = 0.357501672
avg ERF = ERF sum / 3 = 0.119167224

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 1375
riparian buffer width (ft) = 500
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7512

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.103453821696

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367

Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.935
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.9952238

Sum of All AFDRPF factors = 1.42115896

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.524612781696

2016

distance to stream (ft) = 1375
riparian buffer width (ft) = 500
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7512

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.103453821696

MANURE APPLICATION
Manure: Wean to Finish

Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.817
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99316116

Sum of All AFDRPF factors = 1.41909632

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.522550141696

2017

distance to stream (ft) = 1375
riparian buffer width (ft) = 500
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 40
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7512

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.103453821696

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 24.367
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.42593516

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 56.817
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99316116

Sum of All AFDRPF factors = 1.41909632

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.522550141696

Averaging over the years
RRF sum = 4.569713065088
Avg RRF = RRF sum / 3 = 1.52323768836267

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.9066

MUSYM: 14B
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 40
hydrologic group = C
crop type = Hay

runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.9066

MUSYM: 14B
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 40
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater

Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 119
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.9066

MUSYM: 14B
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 40
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.119167224
avg RRF = 1.52323768836267
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 13.9604417550827

667: A1

Table 5-1 Screening Criteria
pysiographic region = Eastern Shore and Lower Coastal Plain
Soil test P ppm = 11.5
Therefore N-based

667: A2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 2345
riparian buffer width (ft) = 1285
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 597.774

erosion = 1.66
ERF = erosion * SDF * STPF * 0.002 = 0.793843872

2016

dist. to Stream (ft) = 2345
riparian buffer width (ft) = 1285
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 597.774

erosion = 1.66
ERF = erosion * SDF * STPF * 0.002 = 0.793843872

2017

dist. to Stream (ft) = 2345
riparian buffer width (ft) = 1285
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 597.774

erosion = 1.66
ERF = erosion * SDF * STPF * 0.002 = 0.793843872

Averaging over the years
ERF sum = 2.381531616
avg ERF = ERF sum / 3 = 0.793843872

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 2345

riparian buffer width (ft) = 1285
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 26B
% of field = 25
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

MUSYM: 28B
% of field = 75
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 4.99

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 1.0049

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.454329318404

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 14.75
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.25783

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 34.2377
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.598474996

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.225
Method of Application Factor from Table 11(MAF) = 0.2

fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.283613

Sum of All AFDRPF factors = 1.139917996

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.594247314404

2016

distance to stream (ft) = 2345
riparian buffer width (ft) = 1285
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 26B
% of field = 25
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

MUSYM: 28B
% of field = 75
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 4.99

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 1.0049

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.454329318404

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 11.564
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.20213872

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation

Applied P2O5: 34.2318
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.598371864

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.3253
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.285366244

Sum of All AFDRPF factors = 1.085876828

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.540206146404

2017

distance to stream (ft) = 2345
riparian buffer width (ft) = 1285
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 26B
% of field = 25
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

MUSYM: 28B
% of field = 75
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 4.99

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 1.0049

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.454329318404

MANURE APPLICATION

Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 13.393
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.23410964

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 31.2228
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.545774544

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.343
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.28567564

Sum of All AFDRPF factors = 1.065559824

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.519889142404

Averaging over the years
RRF sum = 4.654342603212
Avg RRF = RRF sum / 3 = 1.551447534404

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.1603

MUSYM: 26B
% of field = 25
hydrologic group = C
crop type = Row crop/small grain rotation

runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

MUSYM: 28B
% of field = 75
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 16.95

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.1603

MUSYM: 26B
% of field = 25
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater

Percolation from Tables 12-15 = 16.95

MUSYM: 28B
% of field = 75
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 16.95

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 162
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.1603

MUSYM: 26B
% of field = 25
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

MUSYM: 28B
% of field = 75
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 16.95

MUSYM: 26B

Soil Series: Nansemond(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.793843872
avg RRF = 1.551447534404
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 19.934976954434

667: A3

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 873
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 642.7695

erosion = 0.34
ERF = erosion * SDF * STPF * 0.002 = 0.174833304

2016

dist. to Stream (ft) = 873
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 642.7695

erosion = 0.34
ERF = erosion * SDF * STPF * 0.002 = 0.174833304

2017

dist. to Stream (ft) = 873
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 642.7695

erosion = 0.34
ERF = erosion * SDF * STPF * 0.002 = 0.174833304

Averaging over the years
ERF sum = 0.524499912
avg ERF = ERF sum / 3 = 0.174833304

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 873
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 35
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 2A
% of field = 5
hydrologic group = D
curve No. = 78
runoff for soil from Table 7 = 3.3

weighted avg. runoff from field (RFF) = 1.609

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 1.10225

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.160688028731

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 28.674
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.50122152

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 67.2718
Method of Application Factor from Table 11(MAF) = 0.2

fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.175911064

Sum of All AFDRPF factors = 1.677132584

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.837820612731

2016

distance to stream (ft) = 873
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 35
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 2A
% of field = 5
hydrologic group = D
curve No. = 78
runoff for soil from Table 7 = 3.3

weighted avg. runoff from field (RFF) = 1.609

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 1.10225

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.160688028731

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 27.435
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.4795638

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 63.8085
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.11537258

Sum of All AFDRPF factors = 1.59493638

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.755624408731

2017

distance to stream (ft) = 873
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 28C
% of field = 35
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 28B
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 2A
% of field = 5
hydrologic group = D
curve No. = 78
runoff for soil from Table 7 = 3.3

weighted avg. runoff from field (RFF) = 1.609

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 1.10225

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.160688028731

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 26.845
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.4692506

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 62.6698
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.095468104

Sum of All AFDRPF factors = 1.564718704

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.725406732731

Averaging over the years
RRF sum = 5.318851754193
Avg RRF = RRF sum / 3 = 1.772950584731

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.25765

MUSYM: 28C
% of field = 35
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 60

hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 2A
% of field = 5
hydrologic group = D
crop type = Hay
runoff curve No. from Table 6 = 78
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 12.54

Avg. Percolation over all soils = 14.231

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 2A

Soil Series: Bibb(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

Average STDF over all soils = 0.0375
SRF = percolation * STDF * SDRPF * 0.22651 = 0.152024597274244

2016

soil test VT P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.25765

MUSYM: 28C
% of field = 35
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 2A
% of field = 5
hydrologic group = D
crop type = Hay
runoff curve No. from Table 6 = 78
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 12.54

Avg. Percolation over all soils = 14.231

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 2A

Soil Series: Bibb(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

Average STDF over all soils = 0.0375
SRF = percolation * STDF * SDRPF * 0.22651 = 0.152024597274244

2017

soil test VT P ppm = 178.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 1.25765

MUSYM: 28C
% of field = 35
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 28B
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 2A
% of field = 5
hydrologic group = D
crop type = Hay
runoff curve No. from Table 6 = 78
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 12.54

Avg. Percolation over all soils = 14.231

MUSYM: 28C

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 28B

Soil Series: Nevarc(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Remlik(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 2A

Soil Series: Bibb(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

Average STDF over all soils = 0.0375
SRF = percolation * STDF * SDRPF * 0.22651 = 0.152024597274244

Averaging over the years
SRF sum = 0.456073791822731
avg SRF = SRF sum / 3 = 0.152024597274244

P-Index
avg ERF = 0.174833304
avg RRF = 1.772950584731
avg SRF = 0.152024597274244
P-Index = 8.5 * (ERF + RRF + SRF) = 17.8483721310446

667: B1

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 2875
riparian buffer width (ft) = 782
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.76
ERF = erosion * SDF * STPF * 0.002 = 0.19018392

2016

dist. to Stream (ft) = 2875
riparian buffer width (ft) = 782
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.76
ERF = erosion * SDF * STPF * 0.002 = 0.19018392

2017

dist. to Stream (ft) = 2875
riparian buffer width (ft) = 782
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.76
ERF = erosion * SDF * STPF * 0.002 = 0.19018392

Averaging over the years
ERF sum = 0.57055176
avg ERF = ERF sum / 3 = 0.19018392

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 2875
riparian buffer width (ft) = 782
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33A
% of field = 40
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

MUSYM: 35B
% of field = 40
hydrologic group = A
curve No. = 63
runoff for soil from Table 7 = 0.54

MUSYM: 14B
% of field = 20
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 3.21

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.112947263514

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 15.812
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.27639376

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation

Applied P2O5: 37.2644
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.651381712

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.3253
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.285366244

Sum of All AFDRPF factors = 1.213141716

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.326088979514

2016

distance to stream (ft) = 2875
riparian buffer width (ft) = 782
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33A
% of field = 40
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

MUSYM: 35B
% of field = 40
hydrologic group = A
curve No. = 63
runoff for soil from Table 7 = 0.54

MUSYM: 14B
% of field = 20
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 3.21

physiographic region = Eastern Shore and Lower Coastal Plain

land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.112947263514

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 14.632
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.25576736

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 35.046
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.61260408

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.343
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.28567564

Sum of All AFDRPF factors = 1.15404708

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.266994343514

2017

distance to stream (ft) = 2875
riparian buffer width (ft) = 782
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 33A
% of field = 40
hydrologic group = C
curve No. = 82

runoff for soil from Table 7 = 4.99

MUSYM: 35B
% of field = 40
hydrologic group = A
curve No. = 63
runoff for soil from Table 7 = 0.54

MUSYM: 14B
% of field = 20
hydrologic group = C
curve No. = 82
runoff for soil from Table 7 = 4.99

weighted avg. runoff from field (RFF) = 3.21

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.112947263514

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 18.585
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.3248658

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 29.8363
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.521538524

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 16.3253
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.285366244

Sum of All AFDRPF factors = 1.131770568

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.244717831514

Averaging over the years
RRF sum = 3.837801154542
Avg RRF = RRF sum / 3 = 1.279267051514

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 33A
% of field = 40
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

MUSYM: 35B
% of field = 40
hydrologic group = A
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 63
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 21.4

MUSYM: 14B
% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 18.73

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 33A
% of field = 40
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

MUSYM: 35B
% of field = 40
hydrologic group = A
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 63
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 21.4

MUSYM: 14B

% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 18.73

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 33A
% of field = 40
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

MUSYM: 35B
% of field = 40
hydrologic group = A
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 63
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 21.4

MUSYM: 14B
% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 82
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.95

Avg. Percolation over all soils = 18.73

MUSYM: 33A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 35B

Soil Series: Uchee(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.19018392
avg RRF = 1.279267051514
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 12.490333257869

667: B2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 1230
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.28
ERF = erosion * SDF * STPF * 0.002 = 0.07006776

2016

dist. to Stream (ft) = 1230
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.28
ERF = erosion * SDF * STPF * 0.002 = 0.07006776

2017

dist. to Stream (ft) = 1230
riparian buffer width (ft) = 873
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 57.5

physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 312.8025

erosion = 0.28
ERF = erosion * SDF * STPF * 0.002 = 0.07006776

Averaging over the years
ERF sum = 0.21020328
avg ERF = ERF sum / 3 = 0.07006776

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 1230
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 12B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A
% of field = 30
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.136

physiographic region = Eastern Shore and Lower Coastal Plain

land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0399713680224

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 41.595
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7270806

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 54.3508
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.950051984

Sum of All AFDRPF factors = 1.677132584

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.7171039520224

2016

distance to stream (ft) = 1230
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 12B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A

% of field = 30
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.136

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0399713680224

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 27.435
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.4795638

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 63.8085
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.11537258

Sum of All AFDRPF factors = 1.59493638

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.6349077480224

2017

distance to stream (ft) = 1230
riparian buffer width (ft) = 873
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 14B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 12B
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 31A
% of field = 30
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 33B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.136

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.38835

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0399713680224

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 38.94
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.6806712

MANURE APPLICATION
Manure: Wean to Finish
Method: Irrigation w/o incorporation
Applied P2O5: 50.5748

Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.884047504

Sum of All AFDRPF factors = 1.564718704

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 1.6046900720224

Averaging over the years
RRF sum = 4.9567017720672
Avg RRF = RRF sum / 3 = 1.6522339240224

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 14B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 12B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 30
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 33B

% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.704

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12B

Soil Series: Craven(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.225
SRF = percolation * STDF * SDRPF * 0.22651 = 0.407478465675

2016

soil test VT P ppm = 57.5

physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 14B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 12B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 30
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 33B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.704

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12B

Soil Series: Craven(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 33B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.225
SRF = percolation * STDF * SDRPF * 0.22651 = 0.407478465675

2017

soil test VT P ppm = 57.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.54375

MUSYM: 14B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 12B
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 31A
% of field = 30
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 33B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.704

MUSYM: 14B

Soil Series: Emporia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12B

Soil Series: Craven(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 31A

Soil Series: Rains(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 33B

Soil Series: Slagle(100% of MU)

soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.225
SRF = percolation * STDF * SDRPF * 0.22651 = 0.407478465675

Averaging over the years
SRF sum = 1.222435397025
avg SRF = SRF sum / 3 = 0.407478465675

P-Index
avg ERF = 0.07006776
avg RRF = 1.6522339240224
avg SRF = 0.407478465675
P-Index = 8.5 * (ERF + RRF + SRF) = 18.1031312724279

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2015Sp	Wean to Finish	22.7 kgals	612	E2	49	Corn (grain)	1112 kgals	1112 kgals
		20.6 kgals	612	F	31	Soybeans (FS)	632 kgals	1745 kgals
		20.7 kgals	612	G	10	Soybeans (FS)	199 kgals	1943 kgals
		41.3 kgals	665	C1	18	Bermudagrass (hay), maint	756 kgals	2699 kgals
		24.1 kgals	665	C2	13	Fescue grass (hay), maint	313 kgals	3013 kgals
		41.3 kgals	665	D	16	Bermudagrass (hay), maint	669 kgals	3682 kgals
		41.3 kgals	665	E1	32	Bermudagrass (hay), maint	1309 kgals	4991 kgals
		26.9 kgals	667	A1	16	Soybeans (FS)	422 kgals	5413 kgals
		25.0 kgals	667	A2	13	Soybeans (FS)	320 kgals	5733 kgals
		48.6 kgals	667	A3	16	Bermudagrass (hay), maint	753 kgals	6486 kgals
		26.8 kgals	667	B1	18	Corn (grain)	472 kgals	6958 kgals
		70.5 kgals	667	B2	21	Bermudagrass (hay), maint	1452 kgals	8410 kgals
2015Su	Wean to Finish	53.1 kgals	612	E2	49	Corn (grain)	2602 kgals	2602 kgals
		48.5 kgals	612	F	31	Soybeans (FS)	1489 kgals	4091 kgals
		48.4 kgals	612	G	10	Soybeans (FS)	465 kgals	4555 kgals
		96.5 kgals	665	C1	18	Bermudagrass (hay), maint	1766 kgals	6321 kgals
		15.5 kgals	665	C2	13	Fescue grass (hay), maint	202 kgals	6523 kgals
		96.6 kgals	665	D	16	Bermudagrass (hay), maint	1565 kgals	8088 kgals
		96.5 kgals	665	E1	32	Bermudagrass (hay), maint	3059 kgals	11147 kgals
		63.1 kgals	667	A1	16	Soybeans (FS)	990 kgals	12137 kgals
		58.0 kgals	667	A2	13	Soybeans (FS)	743 kgals	12880 kgals
		114.0 kgals	667	A3	16	Bermudagrass (hay), maint	1767 kgals	14647 kgals
		63.2 kgals	667	B1	18	Corn (grain)	1112 kgals	15759 kgals
		92.1 kgals	667	B2	21	Bermudagrass (hay), maint	1898 kgals	17656 kgals
2015Fa	Wean to Finish	27.7 kgals	612	E2	49	Rye (cover)	1356 kgals	1356 kgals
		20.6 kgals	612	F	31	Rye (cover)	632 kgals	1988 kgals
		20.6 kgals	612	G	10	Rye (cover)	198 kgals	2186 kgals
		22.7 kgals	665	C2	13	Fescue grass (hay), maint	295 kgals	2481 kgals
		27.4 kgals	667	A1	16	Rye (cover)	430 kgals	2911 kgals
		27.5 kgals	667	A2	13	Rye (cover)	352 kgals	3263 kgals
		27.7 kgals	667	B1	18	Rye (cover)	487 kgals	3750 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2016Sp	Wean to Finish	25.8 kgals	612	E2	49	Soybeans (FS)	1264 kgals	1264 kgals
		19.6 kgals	612	F	31	Corn (grain)	602 kgals	1866 kgals
		18.6 kgals	612	G	10	Corn (grain)	179 kgals	2044 kgals
		41.3 kgals	665	C1	18	Bermudagrass (hay), maint	756 kgals	2800 kgals
		24.1 kgals	665	C2	13	Fescue grass (hay), maint	313 kgals	3114 kgals
		41.3 kgals	665	D	16	Bermudagrass (hay), maint	669 kgals	3783 kgals
		41.3 kgals	665	E1	32	Bermudagrass (hay), maint	1309 kgals	5092 kgals
		20.0 kgals	667	A1	16	Corn (grain)	314 kgals	5406 kgals
		19.6 kgals	667	A2	13	Corn (grain)	251 kgals	5657 kgals
		46.5 kgals	667	A3	16	Bermudagrass (hay), maint	721 kgals	6377 kgals

		24.8 kgals	667	B1	18	Soybeans (FS)	436 kgals	6814 kgals
		46.5 kgals	667	B2	21	Bermudagrass (hay), maint	958 kgals	7772 kgals
2016Su	Wean to Finish	59.0 kgals	612	E2	49	Soybeans (FS)	2891 kgals	2891 kgals
		41.4 kgals	612	F	31	Corn (grain)	1271 kgals	4162 kgals
		41.4 kgals	612	G	10	Corn (grain)	397 kgals	4559 kgals
		96.5 kgals	665	C1	18	Bermudagrass (hay), maint	1766 kgals	6325 kgals
		15.5 kgals	665	C2	13	Fescue grass (hay), maint	202 kgals	6527 kgals
		96.6 kgals	665	D	16	Bermudagrass (hay), maint	1565 kgals	8092 kgals
		96.3 kgals	665	E1	32	Bermudagrass (hay), maint	3053 kgals	11145 kgals
		48.3 kgals	667	A1	16	Corn (grain)	758 kgals	11903 kgals
		58.0 kgals	667	A2	13	Corn (grain)	743 kgals	12645 kgals
		108.2 kgals	667	A3	16	Bermudagrass (hay), maint	1676 kgals	14322 kgals
		59.4 kgals	667	B1	18	Soybeans (FS)	1045 kgals	15367 kgals
		108.2 kgals	667	B2	21	Bermudagrass (hay), maint	2228 kgals	17595 kgals
2016Fa	Wean to Finish	27.7 kgals	612	E2	49	Rye (cover)	1357 kgals	1357 kgals
		27.7 kgals	612	F	31	Rye (cover)	849 kgals	2207 kgals
		27.7 kgals	612	G	10	Rye (cover)	266 kgals	2472 kgals
		19.6 kgals	665	C2	13	Fescue grass (hay), maint	255 kgals	2728 kgals
		27.6 kgals	667	A1	16	Rye (cover)	433 kgals	3161 kgals
		27.7 kgals	667	A2	13	Rye (cover)	354 kgals	3515 kgals
		27.7 kgals	667	B1	18	Rye (cover)	488 kgals	4003 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2017Sp	Wean to Finish	22.7 kgals	612	E2	49	Corn (grain)	1112 kgals	1112 kgals
		18.6 kgals	612	F	31	Soybeans (FS)	571 kgals	1683 kgals
		18.6 kgals	612	G	10	Soybeans (FS)	179 kgals	1862 kgals
		41.3 kgals	665	C1	18	Bermudagrass (hay), maint	756 kgals	2618 kgals
		24.1 kgals	665	C2	13	Fescue grass (hay), maint	313 kgals	2931 kgals
		41.3 kgals	665	D	16	Bermudagrass (hay), maint	669 kgals	3600 kgals
		41.3 kgals	665	E1	32	Bermudagrass (hay), maint	1309 kgals	4909 kgals
		26.9 kgals	667	A1	16	Soybeans (FS)	422 kgals	5332 kgals
		22.7 kgals	667	A2	13	Soybeans (FS)	291 kgals	5622 kgals
		45.5 kgals	667	A3	16	Bermudagrass (hay), maint	705 kgals	6327 kgals
		31.5 kgals	667	B1	18	Corn (grain)	554 kgals	6882 kgals
		66.0 kgals	667	B2	21	Bermudagrass (hay), maint	1360 kgals	8241 kgals
2017Su	Wean to Finish	48.3 kgals	612	E2	49	Corn (grain)	2367 kgals	2367 kgals
		44.6 kgals	612	F	31	Soybeans (FS)	1370 kgals	3736 kgals
		44.5 kgals	612	G	10	Soybeans (FS)	427 kgals	4163 kgals
		96.5 kgals	665	C1	18	Bermudagrass (hay), maint	1766 kgals	5929 kgals
		15.5 kgals	665	C2	13	Fescue grass (hay), maint	202 kgals	6131 kgals
		96.6 kgals	665	D	16	Bermudagrass (hay), maint	1565 kgals	7696 kgals
		96.3 kgals	665	E1	32	Bermudagrass (hay), maint	3053 kgals	10748 kgals
		56.0 kgals	667	A1	16	Soybeans (FS)	879 kgals	11627 kgals
		52.9 kgals	667	A2	13	Soybeans (FS)	677 kgals	12304 kgals
		106.2 kgals	667	A3	16	Bermudagrass (hay), maint	1646 kgals	13951 kgals
		50.6 kgals	667	B1	18	Corn (grain)	890 kgals	14841 kgals
		85.7 kgals	667	B2	21	Bermudagrass (hay), maint	1766 kgals	16606 kgals
2017Fa	Wean to Finish	27.6 kgals	612	E2	49	Rye (cover)	1352 kgals	1352 kgals

20.6 kgals	612	F	31	Rye (cover)	632 kgals	1985 kgals
27.7 kgals	612	G	10	Rye (cover)	266 kgals	2251 kgals
18.5 kgals	665	C2	13	Fescue grass (hay), maint	241 kgals	2491 kgals
27.6 kgals	667	A1	16	Rye (cover)	433 kgals	2925 kgals
27.7 kgals	667	A2	13	Rye (cover)	355 kgals	3279 kgals
27.7 kgals	667	B1	18	Rye (cover)	487 kgals	3766 kgals

Application Summary Report

2015: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	22.7k Wean (Sp) 53.1k Wean (Su)				
667	B1	17.6	26.8k Wean (Sp) 63.2k Wean (Su)				

2015: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	27.7k Wean (Fa)				
	F	30.7	20.6k Wean (Fa)				
	G	9.6	20.6k Wean (Fa)				
667	A1	15.7	27.4k Wean (Fa)				
	A2	12.8	27.5k Wean (Fa)				
	B1	17.6	27.7k Wean (Fa)				

2015: Soybeans (FS)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	20.6k Wean (Sp) 48.5k Wean (Su)				
	G	9.6	20.7k Wean (Sp) 48.4k Wean (Su)				
667	A1	15.7	26.9k Wean (Sp) 63.1k Wean (Su)				
	A2	12.8	25.0k Wean (Sp) 58.0k Wean (Su)				

2015: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	41.3k Wean (Sp) 96.5k Wean (Su)			35-0-0(Sp) 35-0-0(Su)	
	D	16.2	41.3k Wean (Sp) 96.6k Wean (Su)			35-0-0(Sp) 35-0-0(Su)	
	E1	31.7	41.3k Wean (Sp) 96.5k Wean (Su)			35-0-0(Sp) 35-0-0(Su)	
667	A3	15.5	48.6k Wean (Sp) 114.0k Wean (Su)				
	B2	20.6	70.5k Wean (Sp) 92.1k Wean (Su)				

2015: Fescue grass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C2	13.0	24.1k Wean (Sp) 15.5k Wean (Su) 22.7k Wean (Fa)				

2016: Soybeans (FS)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	25.8k Wean (Sp) 59.0k Wean (Su)				
667	B1	17.6	24.8k Wean (Sp) 59.4k Wean (Su)				

2016: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	27.7k Wean (Fa)				

	F	30.7	27.7k Wean (Fa)
	G	9.6	27.7k Wean (Fa)
667	A1	15.7	27.6k Wean (Fa)
	A2	12.8	27.7k Wean (Fa)
	B1	17.6	27.7k Wean (Fa)

2016: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	19.6k Wean (Sp) 41.4k Wean (Su)				
	G	9.6	18.6k Wean (Sp) 41.4k Wean (Su)				
667	A1	15.7	20.0k Wean (Sp) 48.3k Wean (Su)				
	A2	12.8	19.6k Wean (Sp) 58.0k Wean (Su)				

2016: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	41.3k Wean (Sp) 96.5k Wean (Su)			30-0-0(Sp) 30-0-0(Su)	
	D	16.2	41.3k Wean (Sp) 96.6k Wean (Su)			30-0-0(Sp) 30-0-0(Su)	
	E1	31.7	41.3k Wean (Sp) 96.3k Wean (Su)			25-0-0(Sp) 25-0-0(Su)	
667	A3	15.5	46.5k Wean (Sp) 108.2k Wean (Su)				
	B2	20.6	46.5k Wean (Sp) 108.2k Wean (Su)				

2016: Fescue grass (hay), maint.

Tract	Field	Acres	Manure	Broadcast	Banded	Topdress	Lime

			Rate and Type (Season)	Commercial	Commercial	Commercial	(tons)
665	C2	13.0	24.1k Wean (Sp) 15.5k Wean (Su) 19.6k Wean (Fa)				

2017: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	22.7k Wean (Sp) 48.3k Wean (Su)				
667	B1	17.6	31.5k Wean (Sp) 50.6k Wean (Su)				

2017: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	E2	49.0	27.6k Wean (Fa)				
	F	30.7	20.6k Wean (Fa)				
	G	9.6	27.7k Wean (Fa)				
667	A1	15.7	27.6k Wean (Fa)				
	A2	12.8	27.7k Wean (Fa)				
	B1	17.6	27.7k Wean (Fa)				

2017: Soybeans (FS)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
612	F	30.7	18.6k Wean (Sp) 44.6k Wean (Su)				
	G	9.6	18.6k Wean (Sp) 44.5k Wean (Su)				
667	A1	15.7	26.9k Wean (Sp) 56.0k Wean (Su)				

	A2	12.8	22.7k Wean (Sp) 52.9k Wean (Su)				

2017: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C1	18.3	41.3k Wean (Sp) 96.5k Wean (Su)			26-0-0(Sp) 26-0-0(Su)	
	D	16.2	41.3k Wean (Sp) 96.6k Wean (Su)			27-0-0(Sp) 27-0-0(Su)	
	E1	31.7	41.3k Wean (Sp) 96.3k Wean (Su)			20-0-0(Sp) 20-0-0(Su)	
667	A3	15.5	45.5k Wean (Sp) 106.2k Wean (Su)				
	B2	20.6	66.0k Wean (Sp) 85.7k Wean (Su)				

2017: Fescue grass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
665	C2	13.0	24.1k Wean (Sp) 15.5k Wean (Su) 18.5k Wean (Fa)				

Farm Summary Report

Plan: **Revision** **Spring, 2015 - Spring, 2018**

Farm Name: **8509,8510 and 8521**
Location: Surry
Specialist: R.O. Britt
N-based Acres: 250.7
P-based Acres: 0.0

Tract Name: **612**
FSA Number: 913
Location: Surry

Tract Narrative:

Field Name: **E2**
Total Acres: 49.00 Usable Acres: 49.00
FSA Number: 913
Tract: 612
Location: Surry
Slope Class: B Hydrologic Group: C

Riparian buffer width: 1553 ft
Distance to stream: 1553 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 12.14

Field Narrative:

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.87 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.2	VH(188.75 P lbs/acre)	VH(750.5 K lbs/acre)	Virginia Tech
Fa-2011	7.6	VH(226 P lbs/acre)	VH(1098 K lbs/acre)	Virginia Tech
Fa-2012	6.1	M+(33 P lbs/acre)	VH(315 K lbs/acre)	Virginia Tech
Fa-2013	6.4	M(23.6 P lbs/acre)	VH(416 K lbs/acre)	Virginia Tech
Fa-2014	7.0	VH(115 P lbs/acre)	VH(714 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	28C	Nevarc Remlik
50	33A	Slagle
10	10A	Craven
10	33B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	130.0 bushel(s)	Corn (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	34.0 bushel(s)	Soybeans (FS) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	130.0 bushel(s)	Corn (grain) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **F**
Total Acres: 30.70 Usable Acres: 30.70
FSA Number: 913
Tract: 612
Location: Surry
Slope Class: A Hydrologic Group: C

Riparian buffer width: 2843 ft

Distance to stream: 2843 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 9.29

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.93 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.5	M(20.5 P lbs/acre)	VH(403.5 K lbs/acre)	Virginia Tech
Fa-2011	6.9	M(21 P lbs/acre)	VH(440.5 K lbs/acre)	Virginia Tech
Fa-2012	7.1	H(57 P lbs/acre)	VH(457 K lbs/acre)	Virginia Tech
Fa-2013	6.9	H-(43.5 P lbs/acre)	VH(712 K lbs/acre)	Virginia Tech
Fa-2014	6.6	M(30 P lbs/acre)	VH(451 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
85	10A	Craven
5	11B3	Craven
10	26B	Nansemond

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	26.2 * bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	104.8 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	26.2 * bushel(s)	Soybeans (FS) - No Till

2017-Fa	0.0	Rye (cover) - No Till

Field Name: G
Total Acres: 9.60 Usable Acres: 9.60
FSA Number: 913
Tract: 612
Location: Surry
Slope Class: A Hydrologic Group: C

Riparian buffer width: 2750 ft
Distance to stream: 2750 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 9.61

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.18 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.2	M(24 P lbs/acre)	VH(366 K lbs/acre)	Virginia Tech
Fa-2011	6.3	L+(12 P lbs/acre)	H-(186 K lbs/acre)	Virginia Tech
Fa-2012	7.2	L+(12 P lbs/acre)	VH(609 K lbs/acre)	Virginia Tech
Fa-2013	7.0	M-(13 P lbs/acre)	VH(478 K lbs/acre)	Virginia Tech
Fa-2014	6.8	M-(20 P lbs/acre)	H+(299 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	26B	Nansemond
20	11B3	Craven

60 10A Craven

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	26.8 bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	107.0 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	26.8 bushel(s)	Soybeans (FS) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Tract Name: **665**
FSA Number: 913
Location: Surry

Field Name: **C1**
Total Acres: 18.30 Usable Acres: 18.30
FSA Number: 913
Tract: 665
Location: Surry
Slope Class: B Hydrologic Group: C

Riparian buffer width: 250 ft
Distance to stream: 250 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 15.95

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0

T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.23 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.9	VH(304 P lbs/acre)	VH(924 K lbs/acre)	Virginia Tech
Fa-2011	7.3	H+(96 P lbs/acre)	VH(533 K lbs/acre)	Virginia Tech
Fa-2012	6.9	VH(129 P lbs/acre)	VH(384 K lbs/acre)	Virginia Tech
Fa-2013	6.6	H(71 P lbs/acre)	M(148 K lbs/acre)	Virginia Tech
Fa-2014	7.8	VH(275 P lbs/acre)	VH(742 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
80	33B	Slagle
10	31A	Rains
10	26B	Nansemond

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	5.7 tons	Bermudagrass (hay), maint. - No Till

Field Name: **C2**

Total Acres:	13.00	Usable Acres:	13.00
FSA Number:	913		
Tract:	665		
Location:		Surry	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 334 ft
Distance to stream: 343 ft

Conservation Practices:

Contour planting
Conservation tillage (>30% residue)

Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 7.05

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.25 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.2	VH(118 P lbs/acre)	VH(608 K lbs/acre)	Virginia Tech
Fa-2011	6.1	H(85 P lbs/acre)	H(273 K lbs/acre)	Virginia Tech
Fa-2012	7.3	H(57 P lbs/acre)	VH(430 K lbs/acre)	Virginia Tech
Fa-2013	6.3	H(75 P lbs/acre)	H-(197 K lbs/acre)	Virginia Tech
Fa-2014	8.3	VH(257 P lbs/acre)	VH(727 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	33B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	4.5 tons	Fescue grass (hay), maint. - No Till
2016-Sp	4.5 tons	Fescue grass (hay), maint. - Tilled
2017-Sp	4.5 tons	Fescue grass (hay), maint. - Tilled

Field Name: **D**

Total Acres:	16.20	Usable Acres:	16.20
FSA Number:	913		
Tract:	665		
Location:		Surry	
Slope Class:	B	Hydrologic Group:	B

Riparian buffer width: 300 ft
Distance to stream: 350 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 14.95

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.23 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.2	VH(280 P lbs/acre)	VH(710 K lbs/acre)	Virginia Tech
Fa-2011	7.7	VH(308 P lbs/acre)	VH(593 K lbs/acre)	Virginia Tech
Fa-2012	7.7	VH(247 P lbs/acre)	VH(688 K lbs/acre)	Virginia Tech
Fa-2013	7.4	VH(183 P lbs/acre)	VH(1114 K lbs/acre)	Virginia Tech
Fa-2014	7.6	VH(202 P lbs/acre)	VH(648 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
40	33B	Slagle
30	35B	Uchee
10	31A	Rains
20	26B	Nansemond

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till

2016-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	4.7 tons	Bermudagrass (hay), maint. - No Till

Field Name: **E1**
Total Acres: 31.70 Usable Acres: 31.70
FSA Number: 913
Tract: 665
Location: Surry
Slope Class: B Hydrologic Group: C

Riparian buffer width: 500 ft
Distance to stream: 1375 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 13.96

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.31 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.9	VH(183.5 P lbs/acre)	VH(1080.5 K lbs/acre)	Virginia Tech
Fa-2011	6.7	VH(116 P lbs/acre)	VH(629 K lbs/acre)	Virginia Tech
Fa-2012	7.9	VH(232 P lbs/acre)	VH(649 K lbs/acre)	Virginia Tech
Fa-2013	6.4	H-(41 P lbs/acre)	VH(426 K lbs/acre)	Virginia Tech
Fa-2014	7.6	VH(238 P lbs/acre)	VH(743 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES

60	14B	Emporia
40	28B	Nevarc Remlik

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till

Tract Name: **667**
FSA Number: 913
Location: Surry

Field Name: **A1**
Total Acres: 15.70 Usable Acres: 15.70
FSA Number: 913
Tract: 667
Location: Surry
Slope Class: A Hydrologic Group: C

Riparian buffer width: 1265 ft
Distance to stream: 2824 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 11.24

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.76 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	5.5	H-(44 P lbs/acre)	H-(177 K lbs/acre)	Virginia Tech
Fa-2011	6.2	H(72 P lbs/acre)	H(262 K lbs/acre)	Virginia Tech
Fa-2012	6.8	H(80 P lbs/acre)	VH(512 K lbs/acre)	Virginia Tech
Fa-2013	6.7	H+(109 P lbs/acre)	VH(504 K lbs/acre)	Virginia Tech
Fa-2014	6.5	M(23 P lbs/acre)	VH(457 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	14A	Emporia
20	17A	Jedburg
60	10A	Craven

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	30.0 bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	112.0 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	30.0 bushel(s)	Soybeans (FS) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **A2**

Total Acres:	12.80	Usable Acres:	12.80
FSA Number:	913		
Tract:	667		
Location:		Surry	
Slope Class:	B	Hydrologic Group:	B

Riparian buffer width: 1285 ft
Distance to stream: 2345 ft

Conservation Practices:
Contour planting

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 19.93

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 1.66 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.3	VH(307 P lbs/acre)	VH(961 K lbs/acre)	Virginia Tech
Fa-2011	7.3	VH(205 P lbs/acre)	VH(793 K lbs/acre)	Virginia Tech
Fa-2012	6.9	H+(96 P lbs/acre)	VH(459 K lbs/acre)	Virginia Tech
Fa-2013	6.5	H+(100 P lbs/acre)	VH(575 K lbs/acre)	Virginia Tech
Fa-2014	7.6	VH(324 P lbs/acre)	VH(1095 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
25	26B	Nansemond
75	28B	Nevarc Remlik

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	28.8 bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	115.0 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	28.8 bushel(s)	Soybeans (FS) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **A3**
Total Acres: 15.50 Usable Acres: 15.50
FSA Number: 913
Tract: 667
Location: Surry

Slope Class: B Hydrologic Group: B

Riparian buffer width: 873 ft
Distance to stream: 873 ft

Conservation Practices:
Contour planting
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 17.85

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.34 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	6.5	VH(303 P lbs/acre)	VH(883 K lbs/acre)	Virginia Tech
Fa-2011	7.2	VH(212 P lbs/acre)	VH(668 K lbs/acre)	Virginia Tech
Fa-2012	6.9	H+(96 P lbs/acre)	VH(459 K lbs/acre)	Virginia Tech
Fa-2013	8.0	VH(422 P lbs/acre)	VH(2080 K lbs/acre)	Virginia Tech
Fa-2014	7.9	VH(357 P lbs/acre)	VH(1054 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
35	28C	Nevarc Remlik
60	28B	Nevarc Remlik
5	2A	Bibb

Field Warnings:
Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Soils with high potential for subsurface lateral flow based on soil texture and poor drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	1.9 tons	Bermudagrass (hay), maint. - No Till

Field Name: **B1**

Total Acres:	17.60	Usable Acres:	17.60
FSA Number:	913		
Tract:	667		
Location:		Surry	
Slope Class:	B	Hydrologic Group:	B

Riparian buffer width: 782 ft
Distance to stream: 2875 ft

Conservation Practices:
Contour planting

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 12.49

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.76 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.4	VH(199 P lbs/acre)	VH(745 K lbs/acre)	Virginia Tech
Fa-2011	7.2	VH(168 P lbs/acre)	VH(573 K lbs/acre)	Virginia Tech
Fa-2012	7.2	VH(153 P lbs/acre)	VH(597 K lbs/acre)	Virginia Tech
Fa-2013	5.7	M(28 P lbs/acre)	M(149 K lbs/acre)	Virginia Tech
Fa-2014	7.5	VH(115 P lbs/acre)	VH(680 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
40	33A	Slagle
40	35B	Uchee
20	14B	Emporia

Field Warnings:
Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	128.0 bushel(s)	Corn (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	34.0 bushel(s)	Soybeans (FS) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	128.0 bushel(s)	Corn (grain) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **B2**

Total Acres:	20.60	Usable Acres:	20.60
FSA Number:	913		
Tract:	667		
Location:		Surry	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 873 ft
Distance to stream: 1230 ft

Conservation Practices:
Contour planting
Pasture (>75% cover)

P-Index Summary
N-based

Phosphorus Limit method: VA P-Index Calulation
P-Index value = 18.1

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.28 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2009	7.2	VH(267 P lbs/acre)	VH(922 K lbs/acre)	Virginia Tech
Fa-2011	8.0	VH(169 P lbs/acre)	VH(1142 K lbs/acre)	Virginia Tech
Fa-2012	7.6	H+(102 P lbs/acre)	VH(645 K lbs/acre)	Virginia Tech
Fa-2013	5.7	H-(41 P lbs/acre)	M+(170 K lbs/acre)	Virginia Tech
Fa-2014	7.6	VH(115 P lbs/acre)	VH(682 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	14B	Emporia
30	12B	Craven Slagle
30	31A	Rains
10	33B	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	2.9 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	2.9 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	2.9 tons	Bermudagrass (hay), maint. - No Till

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
612	913/913	E2	49	Slagle	IIIb	II	III	II	
	913/913	F	31	Craven	IVb	III	Not Suited	IV	
	913/913	G	10	Craven	IVb	III	Not Suited	IV	
665	913/913	C1	18	Slagle	IIIa	I	III	II	
	913/913	C2	13	Slagle	IIb	I	III	I	
	913/913	D	16	Slagle	IIIb	II	III	II	
	913/913	E1	32	Emporia	IVa	II	III	III	
667	913/913	A1	16	Craven	IVa	III	Not Suited	IV	
	913/913	A2	13	Nevarc	IVa	II	Not Suited	III	
	913/913	A3*	16	Nevarc	IVb	III	Not Suited	IV	High Leaching, Poor Drain
	913/913	B1*	18	Slagle	IIIb	II	III	II	High Leaching
	913/913	B2	21	Emporia	IVb	IV	Not Suited	IV	

* Do not apply manure or biosolids more than 30 days prior to planting. Apply commercial fertilizer nitrogen to row crops in split spring applicaions.

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

Joe Elton
Deputy Director of Operations

Rochelle Altholz
Deputy Director of Administration
and Finance

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804)786-6124

March 5, 2015

Mr. R. O. Britt
Murphy-Brown Farms 8509, 8510, and 8521
P.O. Box 1240
Waverly, VA 23890

Dear Mr. Britt,

Your nutrient management plan (NMP), dated 3/1/2015 12:00:00 AM, for a 31500 head swine operation has been approved by the Virginia Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination System (VPDES) permit. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

A copy of this letter must be kept with your nutrient management plan. A copy of this letter and a copy of the approved plan must be sent to the Piedmont Regional Office of the Virginia Department of Environmental Quality (DEQ).

It should be noted that this plan expires 3/1/2018 12:00:00 AM. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

If you have any questions concerning this letter, please feel free to contact me at bobby.long@dcr.virginia.gov or (434) 547-8172.

Sincerely,

Bobby Long
Nutrient Management Coordinator – Animal Waste
Division of Stormwater Management

cc: Tim Sexton, DCR Nutrient Management Program Manager
R O Britt
DEQ Piedmont Regional Office

NUTRIENT MANAGEMENT PLAN IDENTIFICATION

Operator
Murphy-Brown LLC
434 East Main Street
Waverly, VA 23890
(804) 834-2109

Integrator:*None*

Farm Coordinates
Easting: 319000, Northing: 4097200, zone: 18

Watershed Summary
watershed: CU57
county: Sussex

Nutrient Management Planner
R.O. Britt
434 East Main Street
Waverly, VA 23890

Certification Code: 571

Acreage Use Summary
Total Acreage in this plan: 62.9

Cropland:	46.6
Hayland:	16.3
Pasture:	0.
Specialty:	0.

Livestock Summary

Beef Cattle	0
Dairy Cattle	0
Poultry	0
Swine	10500
Other	0

Manure Production Balance

	Imported	Produced	Exported	Used	Net
kgals	0.	17648.8	0.	19071.6	-1422.8
tons	0.	0.	0.	0.	0.

Plan written 3/15/2015
Valid until 3/15/2017

Signature: _____ 2/13/2015
Planner **date**

Murphy-Brown Farm 8512 Narrative

This nutrient management plan is a full revision for Murphy-Brown LLC farm 8512; covered by permit number VPA00575. The farm is located on Rt. 615 in Sussex County, just north of Rt. 460, east of Waverly.

This farm is a 10,500 wean to finish facility. The farm is operated by Murphy-Brown LLC. The swine waste produced on this site is stored and treated by a two stage anaerobic lagoon system. Under normal circumstances, effluent from the second stage lagoon system is land applied with irrigation equipment. The primary means of irrigation on this site is a hard hose traveler. Occasionally application is conducted through the use of an Aerway field applicator. In order to balance effluent utilization, effluent from any lagoon may be applied to any field. There are approximately 62.9 acres of hay and row crop land available for land application.

Crop rotation varies between fields. Fields A1, A3, B, D1, and D2 are in a corn, cover crop, full season soybean rotation. Fields C1 and C2 are in bermuda hay.

Cover crop should be planted early enough in the fall to be quickly established after the harvested crop. The main purpose of the cover crop is to scavenge residual nitrogen from the previous crop. However, fields designated to be a cover crop may also be used to spread nutrients through the fall and early winter to assure adequate storage capacity is available until spring application can begin. The cover crop needs to be planted by November 15.

Commercial fertilizer recommendations are included in this nutrient management plan and may be used to supplement crop nutrient needs if effluent application is insufficient to meet the agronomic requirements of the crop. Any commercial fertilizer application will be incorporated in the application records for the farm and will not exceed the nutrient recommendations in this plan. All commercial fertilizer application shall be made in accordance with guidance outlined within this plan.

The contents of the lagoon are sampled and sent to an approved labratory to establish the nutrient content of both the primary and secondary lagoons. Irrigation is typically conducted with effluent from the secondary lagoon; however irrigation may be conducted from either the Secondary or the Primary lagoon. The appropriate effluent analysis shall be used based on which lagoon the effluent is being irrigated from.

Use of hog manure effluent in cropping rotations:

Double-crop sorghum – (planted after Spring harvest of small grain for hay) Effluent applications may begin after the small grain harvest and no more than 30 days prior to

planting of the grain sorghum. Effluent applications may continue until ½ of the plants in the field have headed but not later than August 31. Total N applied cannot exceed nutrient needs less the residual N from previous effluent applications, legumes, etc. as defined in Standards and Criteria, revised October 2005.

Soybeans – (double crop and full season) Effluent applications may begin no more than 30 days prior to planting of the soybeans. However, effluent application is not recommended prior to growth stage V6 (six unfolded trifoliate leaves). Nitrogen needs will be established using expected yield for corn based on the soil productivity for the field. Effluent applications may continue until growth stage R6 (full-seed stage) but not later than September 30.

Nutrient Management Plan Balance Sheet
(Spring, 2015-Spring, 2018)
Murphy-Brown Farm 8512
Planner: R.O. Britt (cert. No. 571)

Tract: 2053 **Location: Sussex**
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
1/A1(N)	11/11	2015	Corn (grain)	150-0-0	0/0	16.k Swine (Sp)	N/A	8-9-114	50-(110)-(1395)	N/A	10-0-0(ba)	1,2,3,
						180.k Swine (Su)	N/A	93-103-1282			40-0-0(sd)	3,2,4,
			Rye (cover)	40-0-0	0/0	77.k Swine (Fa)	N/A	40-44-548	0-(155)-(1945)	N/A		3,5
		2016	Soybeans (FS)	150-0-0	0/3	16.k Swine (Sp)	N/A	8-9-114	45-(265)-(3340)	N/A		3,2
						180.k Swine (Su)	N/A	93-103-1282				3,2
			Rye (cover)	40-0-0	20/0	77.k Swine (Fa)	N/A	40-44-548	(20)-(310)-(3890)	N/A		3,5
		2017	Corn (grain)	150-0-0	0/4	16.k Swine (Sp)	N/A	8-9-114	45-(420)-(5285)	N/A	10-0-0(ba)	3,2,1,
						180.k Swine (Su)	N/A	93-103-1282			35-0-0(sd)	3,4,2,
			Rye (cover)	40-0-0	0/0	77.k Swine (Fa)	N/A	40-44-548	0-(465)-(5835)	N/A		5,3,2
4/A3(N)	5/5	2015	Corn (grain)	150-0-0	0/0	16.k Swine (Sp)	N/A	8-9-114	50-(110)-(1395)	N/A	10-0-0(ba)	3,2,1,
						180.k Swine (Su)	N/A	93-103-1282			40-0-0(sd)	3,2,4,
			Rye (cover)	40-0-0	0/0	77.k Swine (Fa)	N/A	40-44-548	0-(155)-(1945)	N/A		5
		2016	Soybeans (FS)	150-0-0	0/3	16.k Swine (Sp)	N/A	8-9-114	45-(265)-(3340)	N/A		3,2
						180.k Swine (Su)	N/A	93-103-1282				
			Rye (cover)	40-0-0	20/0	77.k Swine (Fa)	N/A	40-44-548	(20)-(310)-(3890)	N/A		5
		2017	Corn (grain)	150-0-0	0/4	16.k Swine (Sp)	N/A	8-9-114	45-(420)-(5285)	N/A	10-0-0(ba)	3,2,1,
						180.k Swine (Su)	N/A	93-103-1282			35-0-0(sd)	3,2,4,
			Rye (cover)	40-0-0	0/0	77.k Swine (Fa)	N/	40-44-548	0-(465)-(5835)	N/A		

							A						
2/B(N)	13/13	2015	Corn (grain)	150-0-0	0/0	87.4k Swine (Sp)	N/A	45-50-622	0-(165)-(2075)	N/A		3,4,2	
						203.9k Swine (Su)	N/A	105-116-1451				2,1,3	
			Rye (cover)	40-0-0	0/0				40-(165)-(2075)	N/A			
		2016	Soybeans (FS)	150-0-0	0/3	75.k Swine (Sp)	N/A	39-43-534	0-(330)-(4105)	N/A		2,3	
						210.2k Swine (Su)	N/A	108-120-1496				2,3	
			Rye (cover)	40-0-0	21/0				20-(330)-(4105)	N/A			
		2017	Corn (grain)	150-0-0	0/4	72.1k Swine (Sp)	N/A	37-41-513	0-(490)-(6120)	N/A		2,1,3	
						210.6k Swine (Su)	N/A	108-120-1500				2,1,3	
			Rye (cover)	40-0-0	0/0				40-(490)-(6120)	N/A			

Tract: 2053 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes
3/C1(N)	13/13	2015	Bermudagrass hay mt.	270-0-0	0/0	101.k Swine (Sp)	N/A	52-58-719	95-(195)-(2405)	N/A	47-0-0(td)	3,2,6
						237.k Swine (Su)	N/A	122-135-1687			47-0-0(td)	6,3,2,6
		2016	... ...	270-0-0	0/4	101.k Swine (Sp)	N/A	52-58-719	90-(390)-(4810)	N/A	45-0-0(td)	3,2,6
						237.k Swine (Su)	N/A	122-135-1687			45-0-0(td)	6,3,2,6
		2017	... ...	270-0-0	0/5	101.k Swine (Sp)	N/A	52-58-719	90-(585)-(7215)	N/A	45-0-0(td)	3,2,6
						237.k Swine (Su)	N/A	122-135-1687			45-0-0(td)	6,3,2,6
3/C2(N)	3/3	2015	Bermudagrass hay mt.	235-0-0	0/0	100.k Swine (Sp)	N/A	52-57-712	60-(195)-(2435)	N/A	30-0-0(td)	3,2,6
						242.k Swine (Su)	N/A	125-138-1723				6,3
		2016	... ...	235-0-0	0/4	100.k Swine (Sp)	N/A	52-57-712	55-(390)-(4870)	N/A	27-0-0(td)	3,2,6
						242.k Swine (Su)	N/A	125-138-1723			27-0-0(td)	6,3,2,6
		2017	... ...	235-0-0	0/5	100.k Swine (Sp)	N/A	52-57-712	55-(585)-(7305)	N/A	27-0-0(td)	3,2,6
						242.k Swine (Su)	N/A	125-138-1723			27-0-0(td)	6,3,2,6
6/D1(N)	7/7	2015	Soybeans (FS)	150-20-0	0/0	86.8k Swine (Sp)	N/A	45-49-618	0-(145)-(2060)	N/A		3,2
						202.5k Swine (Su)	N/A	104-115-1442				3,2
			Rye (cover)	40-0-0	20/0	76.8k Swine (Fa)	N/A	40-44-547	(20)-(190)-(2605)	N/A		5,3
		2016	Corn (grain)	150-20-0	0/4	72.1k Swine (Sp)	N/A	37-41-513	20-(310)-(4350)	N/A		2,1,3
						173.k Swine (Su)	N/A	89-99-1232				2,3,4
			Rye (cover)	40-0-0	0/0	77.7k Swine (Fa)	N/A	40-44-553	0-(355)-(4905)	N/A		5,3
		2017	Soybeans (FS)	150-20-0	0/5	84.3k Swine (Sp)	N/A	43-48-600	0-(495)-(6910)	N/A		3,2
						197.k Swine (Su)	N/A	101-112-1402				3,2
			Rye (cover)	40-0-0	20/0	77.7k Swine (Fa)	N/A	40-44-553	(20)-(540)-(7465)	N/A		5,3

Tract: 2053 **Location: Sussex**

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
6/D2(N)	12/12	2015	Soybeans (FS)	150-0-0	0/0	87.4k Swine (Sp)	N/A	45-50-622	0-(165)-(2075)	N/A		7,2	
						203.9k Swine (Su)	N/A	105-116-1451				7,2	
			Rye (cover)	40-0-0	20/0				20-(165)-(2075)	N/A			
		2016	Corn (grain)	150-0-0	0/3	72.k Swine (Sp)	N/A	37-41-513	0-(330)-(4105)	N/A		2,7,1	
						213.1k Swine (Su)	N/A	110-121-1518				7,4,2	
			Rye (cover)	40-0-0	0/0				40-(330)-(4105)	N/A			
		2017	Soybeans (FS)	150-0-0	0/4	84.4k Swine (Sp)	N/A	43-48-601	0-(490)-(6105)	N/A		7,2,1	
						196.8k Swine (Su)	N/A	101-112-1401				7,2,4	
			Rye (cover)	0-0-0	20/0				(20)-(490)-(6105)	N/A			

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

1 Band nitrogen with planter

2 Commercial fertilizer may be used in conjunction with or to substitute for lagoon effluent. The total nitrogen applied shall not exceed the recommended rate established in the Nutrient Management Plan.

3 The maximum waste water application rate per event for this field is 0.9 in./ac. or 24,439 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

4 Apply side dress nitrogen when crop is 12 to 14 inches tall. A pre-side dress tissue sample is recommended prior to nitrogen application.

5 The primary purpose of a cover crop is to scavenge residual nitrogen from previous crop. Nutrients may be applied to cover crop at low rates in the fall-winter to manage effluent storage. The crop must be planted by November 15th.

6 Topdress nitrogen after harvest

7 The maximum waste water application rate per event for this field is 0.6 in./ac. or 16,292 gals./ac. Sufficient drying time will be allowed between subsequent irrigation events so that field capacity is not exceeded due to irrigation events.

Nutrient Management Plan Special Conditions for Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge Elimination System (VPDES) Permits

September 2011

The following management practices will be utilized for <u>swine operations</u> requiring a VPA or VPDES permit:

1. Soil samples for manure application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least twenty (20) cores randomly sampled throughout the field. Soil sampling core depth will be from 0-4 inches for land which has not been tilled within the past three (3) years, or 0-6 inches for land that has been tilled within the past three (3) years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.

2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
   - • A&L Eastern Laboratories
   - Agri-Analysis Testing Laboratory
   - AgroLab
   - Brookside Laboratories
   - Logan Labs
   - Midwest Laboratories (must request Mehlich III)
   - Spectrum Analytical Laboratories
   - Virginia Tech Soil Testing Lab
- Waters Agricultural Laboratories (GA)

3. Representative manure samples will be analyzed at a minimum of once per year for VPA permits and twice per year for VPDES permits for the following: total nitrogen or total Kjeldahl nitrogen (TKN), ammonium nitrogen, total phosphorus, total potassium, calcium, magnesium, and percent (%) moisture. Separate samples shall be taken from all manure sources to be used for application (i.e. under-house, lagoon, compost, etc.). All manure analyses shall be performed using laboratory methods consistent with *Recommended Methods of Manure Analysis*, publication A3769, University of Wisconsin, 2003 or other methods approved by the Virginia Department of Conservation and Recreation (DCR). Manure analysis results will be used to determine actual manure rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent manure analysis results (not greater than 1 year old) or the facility's average results based on actual manure analysis.

4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.

5. Make manure applications at or near planting or to existing actively growing crops to ensure that nutrients are properly utilized. Utilize the spreading schedule contained in the nutrient management plan and the spreading schedule in #26 of this document to determine appropriate manure application times and rates. Additional commercial

fertilizer applications (especially nitrogen) should be made as a split application separate from the manure applications, either as a sidedress or topdress application.

6. For permanent hay or pasture, an adequate stand of hay and/or pasture crop species will be established prior to land application of manure. Commercially acceptable stands of the listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

7. Manure will be applied to application sites in a uniform manner.

8. Do not spread manure within the following setback areas:
   - 100 feet from wells or springs
   - 35 feet from surface waters if the entire setback is a permanent perennial vegetated buffer
   - **OR**
   - 100 feet from surface waters if there is not a permanent perennial vegetated buffer of at least 35 feet in width
   - 50 feet from sinkholes*
   - 50 feet from limestone rock outcrops
   - 25 feet from other rock outcrops
   - 10 feet from agricultural drainage ditches (5 feet if injected)
   - 200 feet from occupied dwellings (unless waived in writing by the occupant)

   *Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.

9. To avoid manure runoff from application fields*:
   - Do not spread manure on soils that are saturated.
   - Do not apply liquid manure (above 85% moisture content) or commercial fertilizers to frozen, ice or snow-covered ground.

   *If runoff is observed, reduce the application rate immediately to prevent overland flow, which reaches buffer areas or accumulates in low-lying areas.

10. For odor control and to reduce drift, avoid spreading on windy days.

11. Liquid irrigation systems will be operated in a manner to prevent runoff into buffered areas and low-lying areas. Use a liquid application rate at or below the specified maximum hydraulic application rate for each field per application. Traveling guns used for irrigation of effluent should be operated in a full circle pattern whenever possible to allow for maximum infiltration. A small wedge shaped area may be left dry ahead of the gun to reduce soil compaction.

12. Spreader calibration is extremely critical to ensure proper application rates. Calibration

of equipment or verification of actual equipment application rates shall occur at a minimum of once per year.

13. New waste storage facilities shall be designed, constructed and operated in accordance with the USDA-NRCS *Field Office Technical Guide* and other appropriate NRCS design criteria.

14. Earthen waste storage structures must be regularly inspected and repaired if leaks, slope failures, excessive embankment settlement, eroded banks, or burrowing animals are detected. A protective cover of appropriate vegetation will be established and maintained on all disturbed areas (lagoon and storage pit embankments, berms, pipe runs, etc.). Vegetation such as trees, shrubs and other woody species are limited to areas considered to be appropriate such as wind breaks or visual screens, and are not to be present on lagoon and storage pit embankments, berms, or pipe runs.

15. New lagoons will be charged to at least ½ of treatment volume capacity with water prior to placement of hogs into production facilities in order to promote biological treatment activity and to reduce odor. When charging lagoons, carefully manage the rate of the water input to avoid damage to lagoon liners.

16. For operations with anaerobic lagoons, pumping shall be managed to maintain the lagoon level between the maximum and minimum operating level. The lagoon level shall be pumped to near the minimum operating level in preparation for the late fall-winter period. The effluent removed shall be uniformly applied, to the designated fields in the nutrient management plan, at or below the maximum rate specified in the plan. Visible markers or another practical method shall be used in new lagoons to indicate the minimum and maximum operating levels based on the lagoon design specifications.

17. Waste discharge from inlet pipe(s) must not have direct contact with clay liner, in order to avoid erosion of the liner. The discharge line(s) must extend past the minimum operating level such that lagoon influent will discharge over the water surface.

18. Waste handling structures, piping, pumps, etc. should be inspected on a regular basis to prevent breakdowns, leaks and spills.

19. Composting of animal mortalities will be conducted in accordance with the latest guidance developed by Virginia Cooperative Extension.

20. Any facility required in the General Permit to monitor groundwater shall monitor groundwater for the following parameters at a frequency of at least once annually: static water level, ammonia nitrogen, nitrate nitrogen, pH and conductivity.

21. Nutrient management plans that contain fields in which row crops will be grown will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years. Any such plan revisions will be submitted to DCR for review and approval.

22. This nutrient management plan must be amended or modified and submitted to DCR for review and approval if animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is

applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; and/or manure application fields have Mehlich I soil phosphorus levels at or above 55ppm (110 lbs/acre) where either cropping systems, rotations, or fields are changed.

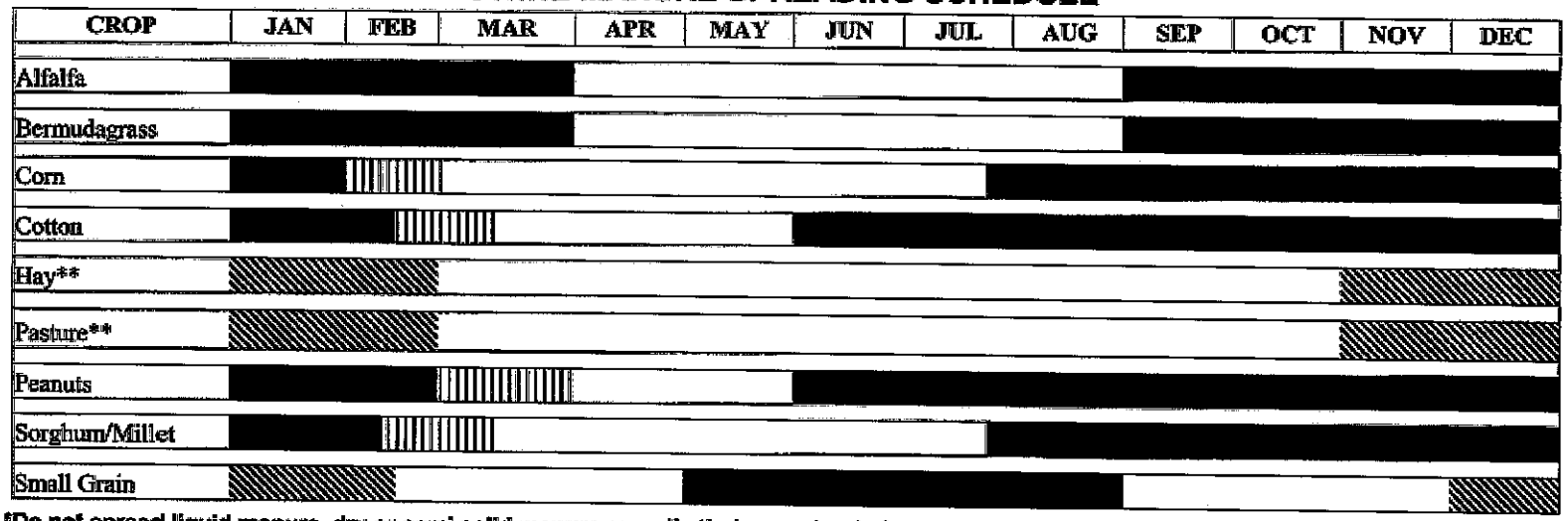
23. Minor plan amendments involving changes to the cropping system, crop rotations, specific application fields, manure analysis results or minor fluctuations in animal market weights or animal numbers (10% or less cumulative increases since this original plan was developed) may be made to this nutrient management plan without he prior approval of DCR by the specific certified nutrient management planner that developed this plan. Any such plan amendments must be made prior to subsequent nutrient application to fields impacted by the change. Certified nutrient management planners shall provide a copy of any such plan amendments to DCR within two (2) weeks of the plan modification.

24. All major plan modifications shall be submitted to DCR for review and approval prior to implementing any changes. Major modifications include, but are not limited to, proposed changes to the plan expiration date; increases in animal numbers of greater than 10%; changes in animal type including intended market weight; additional imported manure, biosolids, or industrial wastes not included in the original plan are to be applied; or available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan due to sale of land, expired lease, etc.

25. These conditions do not override any more restrictive plan requirements if required by other specific legislative, regulatory or incentive programs which apply to a specific operator.26. Manure spreading schedule:

6. Manure spreading schedule.

SWINE MANURE SPREADING SCHEDULE*



***Do not spread liquid manure, dry or semi solid manure on soils that are saturated.**

***Do not spread liquid manure/effluent (above 85.5% moisture content) to frozen, ice or snow covered ground.**

***Application of dry or semi solid manure (85.5% moisture content or less) should be avoided on frozen, ice or snow covered ground. If necessary applications may be made to fields that have: (i) slopes not greater than 6.0%, (ii) 60% uniform ground cover from crop residue or an existing actively growing crop such as a small grain or tall fescue with an exposed plant height of ≥ 3", (iii) a minimum 200-foot vegetated or adequate crop residue buffer between the application area and all surface water courses, and (iv) soils characterized by USDA as "well drained".**

**** Cool season grasses only, Fescue and or Orchardgrass**

Spread liquid manure and dry or semi solid manure at the rates and times specified in the nutrient management plan

Do not spread liquid manure and dry or semi solid manure during these shaded months.

Manure applications will not be made earlier than 30 days prior to planting on environmentally sensitive sites.
On fields not listed as environmentally sensitive:

- **Liquid manure applications will not occur more than 60 days prior to spring planting.**

Manure applications are not recommended during this period (late fall-winter). If necessary uniformly apply a maximum of 3,000 gallons per acre per application. If using an irrigation system apply up to a maximum of a ¼ inch per acre per hour. Do not exceed 40 pounds of plant available nitrogen per acre during this entire period. Allow sufficient drying time between applications. Fields must have greater than 60% uniform live cover with plant height greater than three (3) inches.

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
2053	A1	11	2014-Fa	VH (136 P lbs/acre)	VH (633 K lbs/acre)	Virginia Tech	6.7		
2053	A3	5	2014-Fa	VH (154 P lbs/acre)	VH (650 K lbs/acre)	Virginia Tech	6.1	2015Sp	0.75
2053	B	13	2014-Fa	VH (189 P lbs/acre)	VH (888 K lbs/acre)	Virginia Tech	7.2		
2053	C1	13	2014-Fa	VH (230 P lbs/acre)	VH (767 K lbs/acre)	Virginia Tech	7.6		
2053	C2	3	2014-Fa	VH (156 P lbs/acre)	VH (513 K lbs/acre)	Virginia Tech	7.		
2053	D1	7	2014-Fa	H+ (108 P lbs/acre)	VH (683 K lbs/acre)	Virginia Tech	7.2		
2053	D2	12	2014-Fa	VH (137 P lbs/acre)	VH (836 K lbs/acre)	Virginia Tech	6.7		

Manure Production Summary

Manure Name: Swine Effluent

Animal Summary
Swine: 10500

Manure Storage Capacity: 6519.1 kgals

Manure Analysis:
TKN: 1.03
P2O5: .57
NH4: .94
K2O: 7.12

Plant Available Nutrients:
Immediate Incorporation:
.89 lbs N
.57 lbs P2O5
7.12 lbs K2O
Surface Applied:
.47 lbs N
.57 lbs P2O5
7.12 lbs K2O
Residual N:
yr 1: .01 lbs
yr 2: .00 lbs
yr 3: .00 lbs

Manure Production

Dec-Feb	4412
Mar-May	4412
Jun-Aug	4412
Sep-Nov	4412

Total Produced: 17649
Manure Sold/yr: 0
Manure purch./yr: 0

Liquid Manure Production Details

production [kgal/yr] = (# confined)[animals] * (avg wt)[animal-lbs/animal] * (prod factor)[gal/yr/animal-lb] * (0.001)[kgal/gal] + (# confined)[animals] * (waste-water)[gal/day/animal] * (365)[day/yr] * (0.001)[kgal/gal]

Group Name	animal type	%(#) confined	avg wt	prod factor	waste water	production
Wean to Finish	Swine	100(10500)	125.0	7.5	1.5	15439.2

Net Precipitation Excess

NPE [kgal/yr] = {precip (44.[in/yr]) - evap (40.[in/yr])} * pit/lagoon factor (0.9) * surface area (443103.[sq-ft]) * (1/12)[ft/in] * (7.48)[gal/cu-ft] * (0.001)[kgal/gal] = 2209.61[kgal/yr]

Erosion Calculations for 2053: A1

Erosion Risk Assessment

Soil
MU Symbol = 25A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.319999992847443
add to avg TCxSE: (TC * SE * pct) = 0.44*0.319999992847443*0.2
avg. TCxK for field so far = 0.028159999370575

Soil
MU Symbol = 13B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.239999994635582
add to avg TCxSE: (TC * SE * pct) = 1.41*0.239999994635582*0.8
avg. TCxK for field so far = 0.298879993319511

Avg. TCxK for Field
Field avg. TCxK = 0.298879993319511

For the whole Field
TCxK = 0.298879993319511
TM = 6.16666666666667
Soil Loss = TCxSE * TM = 1.84309329213699

Erosion Calculations for 2053: A3

Erosion Risk Assessment

Soil
MU Symbol = 13B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Crop
TC = 1.41

2016
Crop Type = Crop
TC = 1.41

2017
Crop Type = Crop
TC = 1.41

Avg TC for Soil
Sum TC = 4.23
Avg soil TC over years = 4.23/3 = 1.41

TC x K for soil
K factor = 0.239999994635582
add to avg TCxSE: (TC * SE * pct) = 1.41*0.239999994635582*1

avg. TCxK for field so far = 0.338399992436171

Avg. TCxK for Field
Field avg. TCxK = 0.338399992436171

For the whole Field
TCxK = 0.338399992436171
TM = 6.16666666666667
Soil Loss = TCxSE * TM = 2.08679995335639

Erosion Calculations for 2053: B

Erosion Risk Assessment

Soil
MU Symbol = 17A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.44*0.28*0.2
avg. TCxK for field so far = 0.02464

Soil
MU Symbol = 25A
Region = Coastal Plain
Slope Class = A

2015

Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.319999992847443
add to avg TCxSE: (TC * SE * pct) = 0.44*0.319999992847443*0.1
avg. TCxK for field so far = 3.87199996852875E-02

Soil
MU Symbol = 12A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.44*0.28*0.7
avg. TCxK for field so far = 0.124959999685287

Avg. TCxK for Field
Field avg. TCxK = 0.124959999685287

For the whole Field
TCxK = 0.124959999685287
TM = 3.33333333333333
Soil Loss = TCxSE * TM = 0.416533332284291

Erosion Calculations for 2053: C1

Erosion Risk Assessment

Soil
MU Symbol = 12A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017
Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil
Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.4*0.28*0.3
avg. TCxK for field so far = 0.0336

Soil
MU Symbol = 13B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.239999994635582
add to avg TCxSE: (TC * SE * pct) = 1.24*0.239999994635582*0.1
avg. TCxK for field so far = 6.33599993348122E-02

Soil
MU Symbol = 25A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Hay or Pasture
TC = 0.4

2016
Crop Type = Hay or Pasture
TC = 0.4

2017
Crop Type = Hay or Pasture
TC = 0.4

Avg TC for Soil
Sum TC = 1.2
Avg soil TC over years = 1.2/3 = 0.4

TC x K for soil
K factor = 0.319999992847443
add to avg TCxSE: (TC * SE * pct) = 0.4*0.319999992847443*0.6
avg. TCxK for field so far = 0.140159997618198

Avg. TCxK for Field
Field avg. TCxK = 0.140159997618198

For the whole Field
TCxK = 0.140159997618198
TM = 1
Soil Loss = TCxSE * TM = 0.140159997618198

Erosion Calculations for 2053: C2

Erosion Risk Assessment

Soil
MU Symbol = 23B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016
Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 1.24*0.28*0.9
avg. TCxK for field so far = 0.31248

Soil
MU Symbol = 25B
Region = Coastal Plain
Slope Class = B

2015
Crop Type = Hay or Pasture
TC = 1.24

2016

Crop Type = Hay or Pasture
TC = 1.24

2017
Crop Type = Hay or Pasture
TC = 1.24

Avg TC for Soil
Sum TC = 3.72
Avg soil TC over years = 3.72/3 = 1.24

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 1.24*0.28*0.1
avg. TCxK for field so far = 0.3472

Avg. TCxK for Field
Field avg. TCxK = 0.3472

For the whole Field
TCxK = 0.3472
TM = 1
Soil Loss = TCxSE * TM = 0.3472

Erosion Calculations for 2053: D1

Erosion Risk Assessment

Soil
MU Symbol = 12C
Region = Coastal Plain
Slope Class = C

2015
Crop Type = Crop
TC = 2.78

2016
Crop Type = Crop
TC = 2.78

2017
Crop Type = Crop
TC = 2.78

Avg TC for Soil

Sum TC = 8.34
Avg soil TC over years = 8.34/3 = 2.78

TC x K for soil
K factor = 0.100000001490116
add to avg TCxSE: (TC * SE * pct) = 2.78*0.100000001490116*0.2
avg. TCxK for field so far = 5.56000008285046E-02

Soil
MU Symbol = 25A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.319999992847443
add to avg TCxSE: (TC * SE * pct) = 0.44*0.319999992847443*0.8
avg. TCxK for field so far = 0.168239998310804

Avg. TCxK for Field
Field avg. TCxK = 0.168239998310804

For the whole Field
TCxK = 0.168239998310804
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 0.953359990427892

Erosion Calculations for 2053: D2

Erosion Risk Assessment

Soil
MU Symbol = 25A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.319999992847443
add to avg TCxSE: (TC * SE * pct) = 0.44*0.319999992847443*0.3
avg. TCxK for field so far = 4.22399990558624E-02

Soil
MU Symbol = 12C
Region = Coastal Plain
Slope Class = C

2015
Crop Type = Crop
TC = 2.78

2016
Crop Type = Crop
TC = 2.78

2017
Crop Type = Crop
TC = 2.78

Avg TC for Soil
Sum TC = 8.34
Avg soil TC over years = 8.34/3 = 2.78

TC x K for soil
K factor = 0.100000001490116
add to avg TCxSE: (TC * SE * pct) = 2.78*0.100000001490116*0.3
avg. TCxK for field so far = 0.125640000298619

Soil
MU Symbol = 12A
Region = Coastal Plain
Slope Class = A

2015
Crop Type = Crop
TC = 0.44

2016
Crop Type = Crop
TC = 0.44

2017
Crop Type = Crop
TC = 0.44

Avg TC for Soil
Sum TC = 1.32
Avg soil TC over years = 1.32/3 = 0.44

TC x K for soil
K factor = 0.28
add to avg TCxSE: (TC * SE * pct) = 0.44*0.28*0.4
avg. TCxK for field so far = 0.174920000298619

Avg. TCxK for Field
Field avg. TCxK = 0.174920000298619

For the whole Field
TCxK = 0.174920000298619
TM = 5.66666666666667
Soil Loss = TCxSE * TM = 0.99121333502551

2053: A1

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 480
riparian buffer width (ft) = 480
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 341.436

erosion = 1.84
ERF = erosion * SDF * STPF * 0.002 = 0.502593792

2016

dist. to Stream (ft) = 480
riparian buffer width (ft) = 480
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 341.436

erosion = 1.84
ERF = erosion * SDF * STPF * 0.002 = 0.502593792

2017

dist. to Stream (ft) = 480
riparian buffer width (ft) = 480
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 341.436

erosion = 1.84
ERF = erosion * SDF * STPF * 0.002 = 0.502593792

Averaging over the years
ERF sum = 1.507781376
avg ERF = ERF sum / 3 = 0.502593792

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 480
riparian buffer width (ft) = 480
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 20
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 13B
% of field = 80
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.4503

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.149324271192

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6

Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.869387071192

2016

distance to stream (ft) = 480
riparian buffer width (ft) = 480
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 20
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 13B
% of field = 80
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.4503

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.149324271192

MANURE APPLICATION
Manure: Swine Effluent

Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.869387071192

2017

distance to stream (ft) = 480
riparian buffer width (ft) = 480
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 20
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 13B
% of field = 80
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.4503

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.149324271192

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.869387071192

Averaging over the years
RRF sum = 8.608161213576
Avg RRF = RRF sum / 3 = 2.869387071192

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6057

MUSYM: 25A
% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 13B
% of field = 80
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6057

MUSYM: 25A
% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 13B
% of field = 80
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 68
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6057

MUSYM: 25A
% of field = 20
hydrologic group = C
crop type = Row crop/small grain rotation

runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 13B
% of field = 80
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.502593792
avg RRF = 2.869387071192
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 28.661837337132

2053: A3

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 615
riparian buffer width (ft) = 615
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 365.979

erosion = 2.09
ERF = erosion * SDF * STPF * 0.002 = 0.611916888

2016

dist. to Stream (ft) = 615
riparian buffer width (ft) = 615
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 365.979

erosion = 2.09
ERF = erosion * SDF * STPF * 0.002 = 0.611916888

2017

dist. to Stream (ft) = 615
riparian buffer width (ft) = 615
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 365.979

erosion = 2.09
ERF = erosion * SDF * STPF * 0.002 = 0.611916888

Averaging over the years
ERF sum = 1.835750664
avg ERF = ERF sum / 3 = 0.611916888

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 615
riparian buffer width (ft) = 615
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 13B
% of field = 100
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.5034

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.166932796176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2

AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.886995596176

2016

distance to stream (ft) = 615
riparian buffer width (ft) = 615
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 13B
% of field = 100
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.5034

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.166932796176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent

Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.886995596176

2017

distance to stream (ft) = 615
riparian buffer width (ft) = 615
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 13B
% of field = 100
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.5034

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.166932796176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 9.12
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.1594176

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 102.6
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.793448

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 43.89
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7671972

Sum of All AFDRPF factors = 2.7200628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.886995596176

Averaging over the years
RRF sum = 8.660986788528
Avg RRF = RRF sum / 3 = 2.886995596176

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6588

MUSYM: 13B
% of field = 100
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0

SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6588

MUSYM: 13B
% of field = 100
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 77
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6588

MUSYM: 13B
% of field = 100
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.611916888
avg RRF = 2.886995596176
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 29.740756115496

2053: B

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 260
riparian buffer width (ft) = 260
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 413.7015

erosion = 0.56
ERF = erosion * SDF * STPF * 0.002 = 0.185338272

2016

dist. to Stream (ft) = 260
riparian buffer width (ft) = 260
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 413.7015

erosion = 0.56
ERF = erosion * SDF * STPF * 0.002 = 0.185338272

2017

dist. to Stream (ft) = 260
riparian buffer width (ft) = 260
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 413.7015

erosion = 0.56
ERF = erosion * SDF * STPF * 0.002 = 0.185338272

Averaging over the years
ERF sum = 0.556014816
avg ERF = ERF sum / 3 = 0.185338272

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 260
riparian buffer width (ft) = 260
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 17A
% of field = 20
hydrologic group = D
curve No. = 83
runoff for soil from Table 7 = 5.53

MUSYM: 25A
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 70
hydrologic group = C
curve No. = 79

runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 4.034

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.60665

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.2217284735644

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 49.818
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.87081864

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 116.1945
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.03107986

Sum of All AFDRPF factors = 2.9018985

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.1236269735644

2016

distance to stream (ft) = 260
riparian buffer width (ft) = 260
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 17A
% of field = 20
hydrologic group = D
curve No. = 83
runoff for soil from Table 7 = 5.53

MUSYM: 25A
% of field = 10

hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 70
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 4.034

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.60665

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.2217284735644

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 42.75
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.74727

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 119.7855
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.09385054

Sum of All AFDRPF factors = 2.84112054

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.0628490135644

2017

distance to stream (ft) = 260
riparian buffer width (ft) = 260
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 17A
% of field = 20
hydrologic group = D
curve No. = 83
runoff for soil from Table 7 = 5.53

MUSYM: 25A
% of field = 10
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 70
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 4.034

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.60665

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.2217284735644

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 41.1084
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.718574832

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 120.0477
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.098433796

Sum of All AFDRPF factors = 2.817008628

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.0387371015644

Averaging over the years
RRF sum = 9.2252130886932
Avg RRF = RRF sum / 3 = 3.0750710295644

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.76205

MUSYM: 17A
% of field = 20
hydrologic group = D
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 83
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.41

MUSYM: 25A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 70
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 17.906

MUSYM: 17A

Soil Series: Myatt(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.15
SRF = percolation * STDF * SDRPF * 0.22651 = 0.46361842441845

2016

soil test VT P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.76205

MUSYM: 17A
% of field = 20
hydrologic group = D
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 83
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 16.41

MUSYM: 25A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 70
hydrologic group = C

crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 17.906

MUSYM: 17A

Soil Series: Myatt(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.15
SRF = percolation * STDF * SDRPF * 0.22651 = 0.46361842441845

2017

soil test VT P ppm = 94.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.76205

MUSYM: 17A
% of field = 20
hydrologic group = D
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 83
Climatic Zone = Tidewater

Percolation from Tables 12-15 = 16.41

MUSYM: 25A
% of field = 10
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 70
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 17.906

MUSYM: 17A

Soil Series: Myatt(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0.75

Average STDF over all series in MU = 0.75

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0.15
SRF = percolation * STDF * SDRPF * 0.22651 = 0.46361842441845

Averaging over the years
SRF sum = 1.39085527325535
avg SRF = SRF sum / 3 = 0.46361842441845

P-Index
avg ERF = 0.185338272
avg RRF = 3.0750710295644
avg SRF = 0.46361842441845
P-Index = 8.5 * (ERF + RRF + SRF) = 31.6542356708542

2053: C1

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 1300
riparian buffer width (ft) = 140
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 469.605

erosion = 0.14
ERF = erosion * SDF * STPF * 0.002 = 0.05259576

2016

dist. to Stream (ft) = 1300
riparian buffer width (ft) = 140
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 469.605

erosion = 0.14
ERF = erosion * SDF * STPF * 0.002 = 0.05259576

2017

dist. to Stream (ft) = 1300

riparian buffer width (ft) = 140
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 469.605

erosion = 0.14
ERF = erosion * SDF * STPF * 0.002 = 0.05259576

Averaging over the years
ERF sum = 0.15778728
avg ERF = ERF sum / 3 = 0.05259576

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 1300
riparian buffer width (ft) = 140
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 12A
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 13B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 25A
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7276

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.100203675008

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57.5415
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.00582542

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 135.09
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.3613732

Sum of All AFDRPF factors = 3.36719862

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.467402295008

2016

distance to stream (ft) = 1300
riparian buffer width (ft) = 140
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 12A
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 13B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 25A
% of field = 60
hydrologic group = C

curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7276

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.100203675008

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57.57
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.0063236

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 135.09
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.3613732

Sum of All AFDRPF factors = 3.3676968

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.467900475008

2017

distance to stream (ft) = 1300
riparian buffer width (ft) = 140
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 12A
% of field = 30
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 13B

% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

MUSYM: 25A
% of field = 60
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 1.52

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.7276

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.100203675008

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57.57
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.0063236

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 135.09
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.3613732

Sum of All AFDRPF factors = 3.3676968

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.467900475008

Averaging over the years
RRF sum = 10.403203245024
Avg RRF = RRF sum / 3 = 3.467734415008

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.883

MUSYM: 12A
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 13B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 25A
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)

soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.883

MUSYM: 12A
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 13B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 25A
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 115
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.883

MUSYM: 12A
% of field = 30
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 13B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71

Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

MUSYM: 25A
% of field = 60
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 14.32

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 13B

Soil Series: Eulonia(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.05259576

avg RRF = 3.467734415008
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 29.922806487568

2053: C2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 200
riparian buffer width (ft) = 100
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 368.706

erosion = 0.35
ERF = erosion * SDF * STPF * 0.002 = 0.10323768

2016

dist. to Stream (ft) = 200
riparian buffer width (ft) = 100
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 368.706

erosion = 0.35
ERF = erosion * SDF * STPF * 0.002 = 0.10323768

2017

dist. to Stream (ft) = 200
riparian buffer width (ft) = 100
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Pasture/Hayland
sediment total P factor from Table 5 (STPF) = 368.706

erosion = 0.35
ERF = erosion * SDF * STPF * 0.002 = 0.10323768

Averaging over the years
ERF sum = 0.30971304
avg ERF = ERF sum / 3 = 0.10323768

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 200
riparian buffer width (ft) = 100
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 23B
% of field = 90
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 25B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.368

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.5093

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0169812191296

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99636

MANURE APPLICATION

Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 137.94
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.4111912

Sum of All AFDRPF factors = 3.4075512

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.4245324191296

2016

distance to stream (ft) = 200
riparian buffer width (ft) = 100
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 23B
% of field = 90
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 25B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.368

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.5093

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0169812191296

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99636

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 137.94
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.4111912

Sum of All AFDRPF factors = 3.4075512

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.4245324191296

2017

distance to stream (ft) = 200
riparian buffer width (ft) = 100
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 23B
% of field = 90
hydrologic group = B
curve No. = 58
runoff for soil from Table 7 = 0.24

MUSYM: 25B
% of field = 10
hydrologic group = C
curve No. = 71
runoff for soil from Table 7 = 1.52

weighted avg. runoff from field (RFF) = 0.368

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Pasture/Hayland
runoff DRP factor from Table 9 (RDRPF) = 0.5093

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.0169812191296

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 57
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.99636

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 137.94
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.4111912

Sum of All AFDRPF factors = 3.4075512

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.4245324191296

Averaging over the years
RRF sum = 10.2735972573888
Avg RRF = RRF sum / 3 = 3.4245324191296

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6647

MUSYM: 23B
% of field = 90
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 25B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 15.472

MUSYM: 23B

Soil Series: Rumford(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Uchee(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6647

MUSYM: 23B
% of field = 90
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 25B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 15.472

MUSYM: 23B

Soil Series: Rumford(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Uchee(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 78
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.6647

MUSYM: 23B
% of field = 90
hydrologic group = B
crop type = Hay
runoff curve No. from Table 6 = 58
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 15.6

MUSYM: 25B
% of field = 10
hydrologic group = C
crop type = Hay
runoff curve No. from Table 6 = 71
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 14.32

Avg. Percolation over all soils = 15.472

MUSYM: 23B

Soil Series: Rumford(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Uchee(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 25B

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.10323768
avg RRF = 3.4245324191296
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 29.9860458426016

2053: D1

Table 5-1 Screening Criteria
pysiographic region = Eastern Shore and Lower Coastal Plain
Soil test P ppm = 54
Therefore N-based

2053: D2

P-Index Calculations

Erosion Risk Factor (ERF)

2015

dist. to Stream (ft) = 165
riparian buffer width (ft) = 125
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 342.7995

erosion = 0.79
ERF = erosion * SDF * STPF * 0.002 = 0.216649284

2016

dist. to Stream (ft) = 165
riparian buffer width (ft) = 125
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 342.7995

erosion = 0.79
ERF = erosion * SDF * STPF * 0.002 = 0.216649284

2017

dist. to Stream (ft) = 165
riparian buffer width (ft) = 125
sediment delivery factor from Table 4 (SDF) = 0.4

Soil Test P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
Land Use = Continuous No-till
sediment total P factor from Table 5 (STPF) = 342.7995

erosion = 0.79
ERF = erosion * SDF * STPF * 0.002 = 0.216649284

Averaging over the years
ERF sum = 0.649947852
avg ERF = ERF sum / 3 = 0.216649284

Runoff Risk Factor (RRF)

2015

distance to stream (ft) = 165
riparian buffer width (ft) = 125
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 30
hydrologic group = C

curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 40
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.45325

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.15030252258

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 49.818
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.87081864

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 116.1945
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.03107986

Sum of All AFDRPF factors = 2.9018985

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 3.05220102258

2016

distance to stream (ft) = 165
riparian buffer width (ft) = 125
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 40
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.45325

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.15030252258

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 41.04
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.7173792

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 121.4898
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other

P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 2.123641704

Sum of All AFDRPF factors = 2.841020904

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.99132342658

2017

distance to stream (ft) = 165
riparian buffer width (ft) = 125
runoff delivery factor from Table 8 (RDF) = 0.4

MUSYM: 25A
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12C
% of field = 30
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

MUSYM: 12A
% of field = 40
hydrologic group = C
curve No. = 79
runoff for soil from Table 7 = 3.66

weighted avg. runoff from field (RFF) = 3.66

physiographic region = Eastern Shore and Lower Coastal Plain
land use = Continuous No-till
runoff DRP factor from Table 9 (RDRPF) = 0.45325

RRF0 = RFF * RDF * RDRPF * 0.22651 = 0.15030252258

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 48.108
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2

AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 0.84092784

MANURE APPLICATION
Manure: Swine Effluent
Method: Irrigation w/o incorporation
Applied P2O5: 112.176
Method of Application Factor from Table 11(MAF) = 0.2
fertilizer type = Other
P Source Coef from Table 10 (PSC) = 0.2
AFDRPF = 0.437 * applied P2O5 * PSC * MAF = 1.96083648

Sum of All AFDRPF factors = 2.80176432

Runoff Risk Factor (RRF) = RRF0 + AFDRPF = 2.95206684258

Averaging over the years
RRF sum = 8.99559129174
Avg RRF = RRF sum / 3 = 2.99853043058

Subsurface Risk Factor (SRF)

2015

soil test VT P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.60865

MUSYM: 25A
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 40
hydrologic group = C

crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12C

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2016

soil test VT P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.60865

MUSYM: 25A
% of field = 30
hydrologic group = C

crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 40
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12C

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)

soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

2017

soil test VT P ppm = 68.5
physiographic region = Eastern Shore and Lower Coastal Plain
subsurface DRP factor from Table 17 (SDRPF) = 0.60865

MUSYM: 25A
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12C
% of field = 30
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

MUSYM: 12A
% of field = 40
hydrologic group = C
crop type = Row crop/small grain rotation
runoff curve No. from Table 6 = 79
Climatic Zone = Tidewater
Percolation from Tables 12-15 = 18.28

Avg. Percolation over all soils = 18.28

MUSYM: 25A

Soil Series: Slagle(100% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12C

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

MUSYM: 12A

Soil Series: Emporia(60% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Soil Series: Slagle(40% of MU)
soil texture/drainage factor (STDF) for soil series from Table A.3 = 0

Average STDF over all series in MU = 0

Average STDF over all soils = 0
SRF = percolation * STDF * SDRPF * 0.22651 = 0

Averaging over the years
SRF sum = 0
avg SRF = SRF sum / 3 = 0

P-Index
avg ERF = 0.216649284
avg RRF = 2.99853043058
avg SRF = 0
P-Index = 8.5 * (ERF + RRF + SRF) = 27.32902757393

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2015Sp	Swine Effluent	16.0 kgals	2053	A1	11	Corn (grain)	168 kgals	168 kgals
		16.0 kgals	2053	A3	5	Corn (grain)	77 kgals	245 kgals
		87.4 kgals	2053	B	13	Corn (grain)	1136 kgals	1381 kgals
		101.0 kgals	2053	C1	13	Bermudagrass (hay), maint	1322 kgals	2703 kgals
		100.0 kgals	2053	C2	3	Bermudagrass (hay), maint	320 kgals	3023 kgals
		86.8 kgals	2053	D1	7	Soybeans (FS)	573 kgals	3596 kgals
		87.4 kgals	2053	D2	12	Soybeans (FS)	1023 kgals	4619 kgals
2015Su	Swine Effluent	180.0 kgals	2053	A1	11	Corn (grain)	1890 kgals	1890 kgals
		180.0 kgals	2053	A3	5	Corn (grain)	864 kgals	2754 kgals
		203.9 kgals	2053	B	13	Corn (grain)	2650 kgals	5404 kgals
		237.0 kgals	2053	C1	13	Bermudagrass (hay), maint	3105 kgals	8509 kgals
		242.0 kgals	2053	C2	3	Bermudagrass (hay), maint	774 kgals	9283 kgals
		202.5 kgals	2053	D1	7	Soybeans (FS)	1337 kgals	10620 kgals
		203.9 kgals	2053	D2	12	Soybeans (FS)	2385 kgals	13005 kgals
2015Fa	Swine Effluent	77.0 kgals	2053	A1	11	Rye (cover)	809 kgals	809 kgals
		77.0 kgals	2053	A3	5	Rye (cover)	370 kgals	1178 kgals
		76.8 kgals	2053	D1	7	Rye (cover)	507 kgals	1685 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2016Sp	Swine Effluent	16.0 kgals	2053	A1	11	Soybeans (FS)	168 kgals	168 kgals
		16.0 kgals	2053	A3	5	Soybeans (FS)	77 kgals	245 kgals
		75.0 kgals	2053	B	13	Soybeans (FS)	975 kgals	1220 kgals
		101.0 kgals	2053	C1	13	Bermudagrass (hay), maint	1323 kgals	2543 kgals
		100.0 kgals	2053	C2	3	Bermudagrass (hay), maint	320 kgals	2863 kgals
		72.1 kgals	2053	D1	7	Corn (grain)	476 kgals	3339 kgals
		72.0 kgals	2053	D2	12	Corn (grain)	842 kgals	4181 kgals
2016Su	Swine Effluent	180.0 kgals	2053	A1	11	Soybeans (FS)	1890 kgals	1890 kgals
		180.0 kgals	2053	A3	5	Soybeans (FS)	864 kgals	2754 kgals
		210.2 kgals	2053	B	13	Soybeans (FS)	2732 kgals	5486 kgals
		237.0 kgals	2053	C1	13	Bermudagrass (hay), maint	3105 kgals	8591 kgals
		242.0 kgals	2053	C2	3	Bermudagrass (hay), maint	774 kgals	9365 kgals
		173.0 kgals	2053	D1	7	Corn (grain)	1142 kgals	10507 kgals
		213.1 kgals	2053	D2	12	Corn (grain)	2494 kgals	13001 kgals
2016Fa	Swine Effluent	77.0 kgals	2053	A1	11	Rye (cover)	809 kgals	809 kgals
		77.0 kgals	2053	A3	5	Rye (cover)	370 kgals	1178 kgals
		77.7 kgals	2053	D1	7	Rye (cover)	513 kgals	1691 kgals

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2017Sp	Swine Effluent	16.0 kgals	2053	A1	11	Corn (grain)	168 kgals	168 kgals
		16.0 kgals	2053	A3	5	Corn (grain)	77 kgals	245 kgals
		72.1 kgals	2053	B	13	Corn (grain)	938 kgals	1182 kgals

		101.0 kgals	2053	C1	13	Bermudagrass (hay), maint	1323 kgals	2505 kgals
		100.0 kgals	2053	C2	3	Bermudagrass (hay), maint	320 kgals	2825 kgals
		84.3 kgals	2053	D1	7	Soybeans (FS)	556 kgals	3382 kgals
		84.4 kgals	2053	D2	12	Soybeans (FS)	987 kgals	4369 kgals
2017Su	Swine Effluent	180.0 kgals	2053	A1	11	Corn (grain)	1890 kgals	1890 kgals
		180.0 kgals	2053	A3	5	Corn (grain)	864 kgals	2754 kgals
		210.6 kgals	2053	B	13	Corn (grain)	2738 kgals	5492 kgals
		237.0 kgals	2053	C1	13	Bermudagrass (hay), maint	3105 kgals	8597 kgals
		242.0 kgals	2053	C2	3	Bermudagrass (hay), maint	774 kgals	9371 kgals
		197.0 kgals	2053	D1	7	Soybeans (FS)	1300 kgals	10671 kgals
		196.8 kgals	2053	D2	12	Soybeans (FS)	2303 kgals	12974 kgals
2017Fa	Swine Effluent	77.0 kgals	2053	A1	11	Rye (cover)	809 kgals	809 kgals
		77.0 kgals	2053	A3	5	Rye (cover)	370 kgals	1178 kgals
		77.7 kgals	2053	D1	7	Rye (cover)	513 kgals	1691 kgals

Application Summary Report

2015: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	16.0k Swine(Sp) 180.0k Swine(Su)		10-0-0(Su)	40-0-0(Su)	
	A3	4.8	16.0k Swine(Sp) 180.0k Swine(Su)		10-0-0(Sp)	40-0-0(Su)	0.8 (Sp)
	B	13.0	87.4k Swine(Sp) 203.9k Swine(Su)				

2015: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	77.0k Swine(Fa)				
	A3	4.8	77.0k Swine(Fa)				
	D1	6.6	76.8k Swine(Fa)				

2015: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C1	13.1	101.0k Swine(Sp) 237.0k Swine(Su)			47-0-0(Sp) 47-0-0(Su)	
	C2	3.2	100.0k Swine(Sp) 242.0k Swine(Su)			30-0-0(Sp)	

2015: Soybeans (FS)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	D1	6.6	86.8k Swine(Sp) 202.5k Swine(Su)				

	D2	11.7	87.4k Swine(Sp) 203.9k Swine(Su)				

2016: Soybeans (FS)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	16.0k Swine(Sp) 180.0k Swine(Su)				
	A3	4.8	16.0k Swine(Sp) 180.0k Swine(Su)				
	B	13.0	75.0k Swine(Sp) 210.2k Swine(Su)				

2016: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	77.0k Swine(Fa)				
	A3	4.8	77.0k Swine(Fa)				
	D1	6.6	77.7k Swine(Fa)				

2016: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C1	13.1	101.0k Swine(Sp) 237.0k Swine(Su)			45-0-0(Sp) 45-0-0(Su)	
	C2	3.2	100.0k Swine(Sp) 242.0k Swine(Su)			27-0-0(Sp) 27-0-0(Su)	

2016: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)

2053	D1	6.6	72.1k Swine(Sp) 173.0k Swine(Su)
	D2	11.7	72.0k Swine(Sp) 213.1k Swine(Su)

2017: Corn (grain)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	16.0k Swine(Sp) 180.0k Swine(Su)		10-0-0(Sp)	35-0-0(Sp)	
	A3	4.8	16.0k Swine(Sp) 180.0k Swine(Su)		10-0-0(Sp)	35-0-0(Su)	
	B	13.0	72.1k Swine(Sp) 210.6k Swine(Su)				

2017: Rye (cover)

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	A1	10.5	77.0k Swine(Fa)				
	A3	4.8	77.0k Swine(Fa)				
	D1	6.6	77.7k Swine(Fa)				

2017: Bermudagrass (hay), maint.

Tract	Field	Acres	Manure Rate and Type (Season)	Broadcast Commercial	Banded Commercial	Topdress Commercial	Lime (tons)
2053	C1	13.1	101.0k Swine(Sp) 237.0k Swine(Su)			45-0-0(Sp) 45-0-0(Su)	
	C2	3.2	100.0k Swine(Sp) 242.0k Swine(Su)			27-0-0(Sp) 27-0-0(Su)	

2017: Soybeans (FS)

Tract	Field	Acres	Manure	Broadcast	Banded	Topdress	Lime

			Rate and Type (Season)	Commercial	Commercial	Commercial	(tons)
2053	D1	6.6	84.3k Swine(Sp) 197.0k Swine(Su)				
	D2	11.7	84.4k Swine(Sp) 196.8k Swine(Su)				

Farm Summary Report

Plan: **Farm 8512** **Spring, 2015 - Spring, 2018**

Farm Name: **Murphy-Brown Farm 8512**
Location: Sussex
Specialist: R.O. Britt
N-based Acres: 62.9
P-based Acres: 0.0

Tract Name: **2053**
FSA Number: 1065
Location: Sussex

Tract Narrative:

Field Name: **A1**
Total Acres: 10.50 Usable Acres: 10.50
FSA Number: 1
Tract: 2053
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 480 ft
Distance to stream: 480 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 28.66

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 1.84 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.2	VH(265 P lbs/acre)	VH(455 K lbs/acre)	Virginia Tech
Fa-2009	6.5	VH(133 P lbs/acre)	H(253 K lbs/acre)	Virginia Tech
Fa-2010	6.8	VH(212 P lbs/acre)	VH(460 K lbs/acre)	Virginia Tech
Fa-2011	6.5	VH(133 P lbs/acre)	H(253 K lbs/acre)	Virginia Tech
Fa-2012	6.3	VH(150 P lbs/acre)	VH(389 K lbs/acre)	Virginia Tech
Fa-2013	7.0	VH(301 P lbs/acre)	VH(497 K lbs/acre)	Virginia Tech
Fa-2014	6.7	VH(136 P lbs/acre)	VH(633 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	25A	Slagle
80	13B	Eulonia

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2016-Fa	0.0	Rye (cover) - Tilled
2017-Sp	150.0 bushel(s)	Corn (grain) - No Till
2017-Fa	0.0	Rye (cover) - Tilled

Field Name: **A3**

Total Acres:	4.80	Usable Acres:	4.80
FSA Number:	4		
Tract:	2053		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 615 ft
Distance to stream: 615 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 29.74

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 2.09 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.0	VH(158 P lbs/acre)	VH(1092 K lbs/acre)	Virginia Tech
Fa-2009	6.6	VH(138 P lbs/acre)	VH(878 K lbs/acre)	Virginia Tech
Fa-2010	6.2	H(85 P lbs/acre)	VH(587 K lbs/acre)	Virginia Tech
Fa-2011	7.1	VH(165 P lbs/acre)	VH(1217 K lbs/acre)	Virginia Tech
Fa-2012	6.6	H+(106 P lbs/acre)	VH(540 K lbs/acre)	Virginia Tech
Fa-2013	5.5	VH(140 P lbs/acre)	VH(335 K lbs/acre)	Virginia Tech
Fa-2014	6.1	VH(154 P lbs/acre)	VH(650 K lbs/acre)	Virginia Tech

MOST RECENT LIME: Spring-2015 0.8 tons/acre

Soils:

PERCENT	SYMBOL	SOIL SERIES
100	13B	Eulonia

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	150.0 bushel(s)	Corn (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2016-Fa	0.0	Rye (cover) - Tilled
2017-Sp	150.0 bushel(s)	Corn (grain) - No Till

2017-Fa 0.0 Rye (cover) - Tilled

Field Name: **B**
Total Acres: 13.00 Usable Acres: 13.00
FSA Number: 2
Tract: 2053
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 260 ft
Distance to stream: 260 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 31.65

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.56 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.1	VH(171 P lbs/acre)	VH(426 K lbs/acre)	Virginia Tech
Fa-2009	6.2	VH(125 P lbs/acre)	H-(181 K lbs/acre)	Virginia Tech
Fa-2010	6.8	VH(181 P lbs/acre)	VH(346 K lbs/acre)	Virginia Tech
Fa-2011	6.1	H-(48 P lbs/acre)	H(218 K lbs/acre)	Virginia Tech
Fa-2012	7.6	VH(211 P lbs/acre)	VH(496 K lbs/acre)	Virginia Tech
Fa-2013	6.3	VH(142 P lbs/acre)	VH(773 K lbs/acre)	Virginia Tech
Fa-2014	7.2	VH(189 P lbs/acre)	VH(888 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES

20	17A	Myatt
10	25A	Slagle
70	12A	Emporia Slagle

Field Warnings:
Environmentally Sensitive Soils due to:

Subsurface tile drains

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	149.8 bushel(s)	Corn (grain) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	41.0 bushel(s)	Soybeans (FS) - No Till
2016-Fa	0.0	Rye (cover) - Tilled
2017-Sp	149.8 bushel(s)	Corn (grain) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **C1**
Total Acres: 13.10 Usable Acres: 13.10
FSA Number: 3
Tract: 2053
Location: Sussex
Slope Class: A Hydrologic Group: C

Riparian buffer width: 140 ft
Distance to stream: 1300 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 29.92

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.14 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.0	VH(154 P lbs/acre)	VH(479 K lbs/acre)	Virginia Tech
Fa-2009	7.3	VH(201 P lbs/acre)	VH(503 K lbs/acre)	Virginia Tech
Fa-2010	7.5	VH(222 P lbs/acre)	VH(622 K lbs/acre)	Virginia Tech
Fa-2011	7.6	VH(186 P lbs/acre)	VH(543 K lbs/acre)	Virginia Tech
Fa-2012	6.9	VH(193 P lbs/acre)	VH(946 K lbs/acre)	Virginia Tech
Fa-2013	7.8	VH(515 P lbs/acre)	VH(1784 K lbs/acre)	Virginia Tech
Fa-2014	7.6	VH(230 P lbs/acre)	VH(767 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	12A	Emporia Slagle
10	13B	Eulonia
60	25A	Slagle

Field Warnings:

Environmentally Sensitive Soils due to:

Subsurface tile drains

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	6.2 tons	Bermudagrass (hay), maint. - No Till

Field Name: C2

Total Acres: 3.20 Usable Acres: 3.20
FSA Number: 3
Tract: 2053
Location: Sussex
Slope Class: B Hydrologic Group: C

Riparian buffer width: 100 ft
Distance to stream: 200 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)
Pasture (>75% cover)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 29.99

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.35 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.1	VH(117 P lbs/acre)	VH(340 K lbs/acre)	Virginia Tech
Fa-2009	7.0	VH(131 P lbs/acre)	VH(526 K lbs/acre)	Virginia Tech
Fa-2010	7.5	VH(145 P lbs/acre)	VH(829 K lbs/acre)	Virginia Tech
Fa-2011	7.5	H+(108 P lbs/acre)	VH(451 K lbs/acre)	Virginia Tech
Fa-2012	7.6	VH(132 P lbs/acre)	VH(678 K lbs/acre)	Virginia Tech
Fa-2013	7.3	VH(170 P lbs/acre)	VH(937 K lbs/acre)	Virginia Tech
Fa-2014	7.0	VH(156 P lbs/acre)	VH(513 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
90	23B	Rumford Uchee
10	25B	Slagle

Field Warnings:
Environmentally Sensitive Soils due to:

Soils with potential for leaching based on soil texture or excessive drainage

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2016-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till
2017-Sp	3.8 tons	Bermudagrass (hay), maint. - No Till

Field Name: **D1**

Total Acres:	6.60	Usable Acres:	6.60
FSA Number:	6		
Tract:	2053		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 330 ft
Distance to stream: 330 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 32.58

%slope: 0.0	Slope Len: 0.	R factor: 0.0	K factor: 0.0
T factor: 0.0	P factor: 1.0	Cmax: 0.000	Erosion: 0.95 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	6.8	H(81 P lbs/acre)	VH(641 K lbs/acre)	Virginia Tech
Fa-2009	7.5	VH(115 P lbs/acre)	VH(812 K lbs/acre)	Virginia Tech
Fa-2010	7.4	VH(159 P lbs/acre)	VH(840 K lbs/acre)	Virginia Tech
Fa-2011	7.5	H(83 P lbs/acre)	VH(540 K lbs/acre)	Virginia Tech
Fa-2012	7.5	VH(237 P lbs/acre)	VH(721 K lbs/acre)	Virginia Tech

Fa-2013	7.2	VH(206 P lbs/acre)	VH(628 K lbs/acre)	Virginia Tech
Fa-2014	7.2	H+(108 P lbs/acre)	VH(683 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
20	12C	Emporia Slagle
80	25A	Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	148.8 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Field Name: **D2**

Total Acres:	11.70	Usable Acres:	11.70
FSA Number:	6		
Tract:	2053		
Location:		Sussex	
Slope Class:	B	Hydrologic Group:	C

Riparian buffer width: 125 ft
Distance to stream: 165 ft

Conservation Practices:
Contour planting
Conservation tillage (>30% residue)

P-Index Summary
N-based
Phosphorus Limit method: VA P-Index Calulation
P-Index value = 27.33

%slope: 0.0 Slope Len: 0. R factor: 0.0 K factor: 0.0
T factor: 0.0 P factor: 1.0 Cmax: 0.000 Erosion: 0.79 tons/acre

Soil Test Results:

DATE	PH	P	K	Lab
Fa-2008	7.3	VH(207 P lbs/acre)	VH(1052 K lbs/acre)	Virginia Tech
Fa-2009	7.6	VH(219 P lbs/acre)	VH(1281 K lbs/acre)	Virginia Tech
Fa-2010	7.3	VH(220 P lbs/acre)	VH(1456 K lbs/acre)	Virginia Tech
Fa-2011	6.9	H+(106 P lbs/acre)	VH(1647 K lbs/acre)	Virginia Tech
Fa-2012	7.2	VH(208 P lbs/acre)	VH(936 K lbs/acre)	Virginia Tech
Fa-2013	5.9	M(29 P lbs/acre)	VH(1305 K lbs/acre)	Virginia Tech
Fa-2014	6.7	VH(137 P lbs/acre)	VH(836 K lbs/acre)	Virginia Tech

Soils:

PERCENT	SYMBOL	SOIL SERIES
30	25A	Slagle
30	12C	Emporia Slagle
40	12A	Emporia Slagle

Field Warnings:

Crop Rotation:

PLANTED	YIELD	CROP NAME
2015-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2015-Fa	0.0	Rye (cover) - No Till
2016-Sp	145.8 bushel(s)	Corn (grain) - No Till
2016-Fa	0.0	Rye (cover) - No Till
2017-Sp	40.0 bushel(s)	Soybeans (FS) - No Till
2017-Fa	0.0	Rye (cover) - No Till

Tract Name: **Default Tract**
FSA Number: 0
Location: Sussex

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
2053	1065/1	A1	11	Eulonia	IIb	I	III	I	
	1065/4	A3	5	Eulonia	IIb	I	III	I	
	1065/2	B*	13	Emporia	IIb	II	III	I	Tile Drains
	1065/3	C1*	13	Slagle	IIb	I	III	I	Tile Drains
	1065/3	C2*	3	Rumford	IVb	II	Not Suited	III	High Leaching
	1065/6	D1	7	Slagle	IIb	I	III	I	
	1065/6	D2	12	Slagle	IIIa	II	III	II	

* Do not apply manure or biosolids more than 30 days prior to planting. Apply commercial fertilizer nitrogen to row crops in split spring applicaions.

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Molly Joseph Ward
Secretary of Natural Resources

Clyde E. Cristman
Director

Joe Elton
Deputy Director of Operations

Rochelle Altholz
Deputy Director of Administration
and Finance

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804)786-6124

February 20, 2015

Mr. R. O. Britt
Murphy-Brown Farm 8512 (12)
P.O. Box 1240
Waverly, VA 23890

Dear Mr. Britt,

Your nutrient management plan (NMP), dated 3/15/2015, for a 10500 head swine operation has been approved by the Virginia Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) or Virginia Pollutant Discharge Elimination System (VPDES) permit. Only nutrient recommendations for applications to be made after the date of this letter are approved by this letter. Your NMP was written by a nutrient management planner certified by the Virginia Department of Conservation and Recreation.

A copy of this letter must be kept with your nutrient management plan. A copy of this letter and a copy of the approved plan must be sent to the Piedmont Regional Office of the Virginia Department of Environmental Quality (DEQ).

It should be noted that this plan expires 3/15/2018. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

If you have any questions concerning this letter, please feel free to contact me at bobby.long@dcr.virginia.gov or (434) 547-8172.

Sincerely,

Bobby Long

Bobby Long
Nutrient Management Coordinator – Animal Waste
Division of Stormwater Management

cc: Tim Sexton, DCR Nutrient Management Program Manager
R O Britt
DEQ Piedmont Regional Office